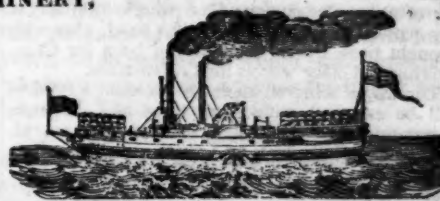


AMERICAN RAILROAD JOURNAL, AND GENERAL ADVERTISER

FOR RAILROADS, CANALS, STEAMBOATS, MACHINERY,
AND MINES.



ESTABLISHED 1831.



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THE AMERICAN RAILROAD JOURNAL is the only periodical having a general circulation throughout the Union, in which all matters connected with public works can be brought to the notice of all persons in any way interested in these undertakings. Hence it offers peculiar advantages for advertising times of departure, rates of fare and freight, improvements in machinery, materials, as iron, timber, stone, cement, etc. It is also the best medium for advertising contracts, and placing the merits of new undertakings fairly before the public.

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FRENCH AND BAIRDS PATENT SPARK ARRESTER.

TO THOSE INTERESTED IN Railroads, Railroad Directors and Managers are respectfully invited to examine an improved SPARK ARRESTER, recently patented by the undersigned.

Our improved Spark Arresters have been extensively used during the last year on both passenger and freight engines, and have been brought to such a state of perfection that no annoyance from sparks or dust from the chimney of engines on which they are used is experienced.

These Arresters are constructed on an entirely different principle from any heretofore offered to the public. The form is such that a rotary motion is imparted to the heated air, smoke and sparks passing through the chimney, and by the centrifugal force thus acquired by the sparks and dust they are separated from the smoke and steam, and thrown into an outer chamber of the chimney through openings near its top, from whence they fall by their own gravity to the bottom of this chamber; the smoke and steam passing off at the top of the chimney, through a capacious and unobstructed passage, thus arresting the sparks without impairing the power of the engine by diminishing the draught or activity of the fire in the furnace.

These chimneys and arresters are simple, durable and neat in appearance. They are now in use on the following roads, to the managers and other officers of which we are at liberty to refer those who may desire to purchase or obtain further information in regard to their merits:

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Orders for these Chimneys and Arresters, addressed to the subscribers, or to Messrs. Baldwin & Whitney, of this city, will be promptly executed.

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Philadelphia, Pa., April 6, 1844. ja45

*** The letters in the figures refer to the article given in the Journal of June, 1844. ja45

A GOOD SECOND HAND LOCOMOTIVE Engine, 6 wheels, weighing with wood and water about 10 tons, with Tender complete, made by Baldwin, for sale by A. & G. RALSTON & CO. Mar. 20, 1m. 4 South Front St., Philadelphia.

SPRING STEEL FOR LOCOMOTIVES. Tenders and Cars. The Subscriber is engaged in manufacturing Spring Steel from 1 1/2 to 6 inches in width, and of any thickness required: large quantities are yearly furnished for railroad purposes, and wherever used, its quality has been approved of. The establishment being large, can execute orders with great promptitude, at reasonable prices, and the quality warranted. Address

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When the exact diameter of the wheel is stated in the order, a fit to those wheels is guaranteed, saving to the purchaser the expense of turning them out inside. THOMAS & EDMUND GEORGE,
ja45 N. E. cor. 12th and Market sts., Philad., Pa.

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Tyres imported to order and constantly on hand
by **A. & G. RALSTON**
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Company continue to furnish at the Works, situated in the town of Newcastle, Del., Locomotive and other steam engines, Jack screws, Wrought iron work and Brass and Iron castings, of all kinds connected with Steamboats, Railroads, etc.; Mill Gearing of every description; Cast wheels (chilled) of any pattern and size, with Axles fitted, also with wrought tires, Springs, Boxes and bolts for Cars; Driving and other wheels for Locomotives.

The works being on an extensive scale, all orders will be executed with promptness and despatch. Communications addressed to Mr. William H. Dobbs, Superintendent, will meet with immediate attention.
ANDREW C. GRAY,
ja45 President of the Newcastle Manuf. Co.

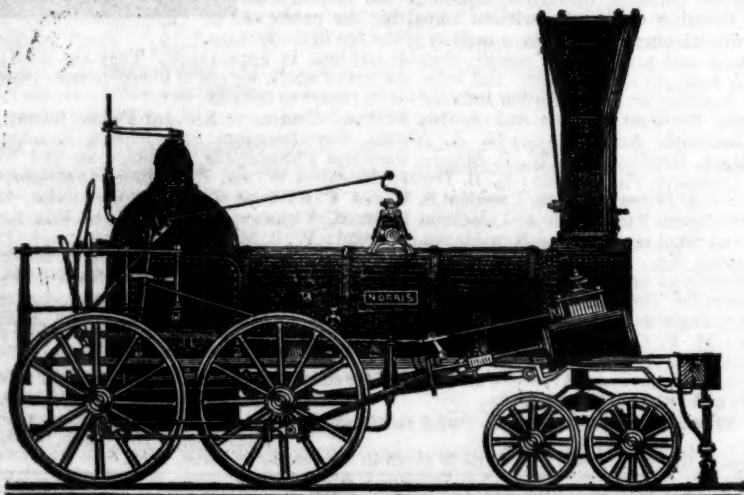
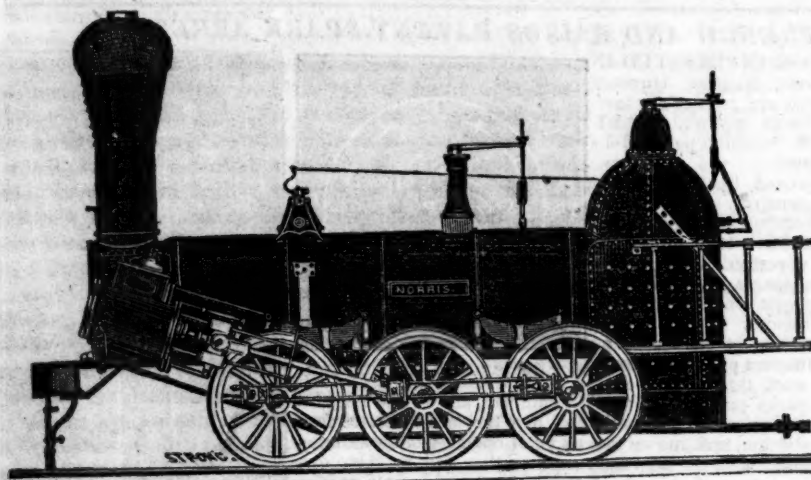
CUSHMAN'S COMPOUND IRON RAILS
etc. The Subscriber having made important improvements in the construction of rails, mode n guarding against accidents from insecure joints, etc.—respectfully offers to dispose of Company, State Rights, etc., under the privileges of letters patent to Railroad Companies, Iron Founders, and others interested in the works to which the same relate. Companies reconstructing their tracks now have an opportunity of improving their roads on terms very advantageous to the varied interests connected with their construction and operation; roads having in use flat bar rails are particularly interested, as such are permanently available by the plan.

W. Mc. C. CUSHMAN, Civil Engineer,
Albany, N. Y.

Mr. C. also announces that Railroads, and other works pertaining to the profession, may be constructed under his advice or personal supervision. Applications must be post paid.

NORRIS' LOCOMOTIVE WORKS

BUSH HILL, PHILADELPHIA, Pennsylvania.



MANUFACTURE their Patent 6 Wheel Combined and 8 Wheel Locomotives of the following descriptions, viz:

Class 1,	15 inches Diameter of Cylinder,	× 20 inches Stroke.
" 2,	14 " " "	× 24 " "
" 3,	14½ " " "	× 20 " "
" 4,	12½ " " "	× 20 " "
" 5,	11½ " " "	× 20 " "
" 6,	10½ " " "	× 18 " "

With Wheels of any dimensions, with their Patent Arrangement for Variable Expansion. Castings of all kinds made to order: and they call attention to their Chilled Wheels, for the Trucks of Locomotives, Tenders and Cars.

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TO IRON MANUFACTURERS. THE SUB-
scribers, as Agents of Mr. George Crane, of Wales, having obtained a patent in the United States for his process of smelting Iron Ore with Anthracite coal, and holding an assignment of the patent obtained by the late Rev. F. W. Geissenhainer, are prepared to grant licenses for the manufacture of Iron according to Mr. Crane's principle.

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From 4 inches to 1 in calibre and 2 to 12 feet long, capable of sustaining pressure from 400 to 2500 lbs. per square inch, with Stop Cocks, T, L, and other fixtures to suit, fitting together, with screw joints, suitable for STEAM, WATER, GAS, and for LOCOMOTIVE and other STEAM BOILER FLUES.



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TO IRON MASTERS.—FOR SALE.—MILL
SITES in the immediate neighborhood of *Biluminous Coal and Iron Ore*, of the first quality, at Ralston, Lycoming Co., Pa. This is the nearest point to tide water where such coal and ore are found together, and the communication is complete with Philadelphia and Baltimore by canals and railways. The interest on the cost of water power and lot is all that will be required for many years; the coal will not cost more than \$1 to \$1 25 at the mill sites, without any trouble on the part of the manufacturer; rich iron ore may be laid down still more cheaply at the works; and, taken together, these sites offer remarkable advantages to practical manufacturers with small capital. For pamphlets, descriptive of the property, and further information, apply to Archibald McIntyre, Albany, to Archibald Robertson, Philadelphia; or to the undersigned, at No. 23 Chambers street, New York, where may be seen specimens of the coal and ore.

W. R. CASEY, Civil Engineer,

VALUABLE PROPERTY ON THE MILL
Dam For Sale. A lot of land on Gravelly Point, so called, on the Mill Dam, in Roxbury, fronting on and east of Parker street, containing 68,497 square feet, with the following buildings thereon standing.

Main brick building, 120 feet long, by 46 ft wide, two stories high. A machine shop, 47x43 feet, with large engine, face, screw, and other lathes, suitable to do any kind of work.

Pattern shop, 35x32 feet, with lathes, work benches, &c.

Work shop, 86x35 feet, on the same floor with the pattern shop.

Forge shop, 118 feet long by 44 feet wide on the ground floor, with two large water wheels, each 16 feet long, 9 ft diameter, with all the gearing, shafts, drums, pulleys, &c., large and small trip hammers, furnaces, forges, rolling mill, with large balance wheel and a large blowing apparatus for the foundry.

Foundry, at end of main brick building, 60x45½ feet two stories high, with a shed part 45½x20 feet, containing a large air furnace, cupola, crane and corn oven.

Store house—a range of buildings for storage, etc., 200 feet long by 20 wide.

Locomotive shop, adjoining main building, fronting on Parker street, 54x25 feet.

Also—A lot of land on the canal, west side of Parker st., containing 6000 feet, with the following buildings thereon standing:

Boiler house 50 feet long by 30 feet wide, two stories.

Blacksmith shop, 49 feet long by 20 feet wide.

For terms, apply to **HENRY ANDREWS**, 48 State st., or to **CURTIS, LEAVENS & CO.**, 106 State st., Boston, or to **A. & G. RALSTON & Co.**, Philadelphia.
ja45

FIRST ANNUAL REPORT OF THE SOUTH-CAROLINA RAILROAD COMPANY.

The statements from the Auditor which accompany this report, will exhibit a satisfactory account of the property, the liabilities, and the available assets of the S. C. R. R. company as now consolidated. To the Tabular statement No. 6, the attention of the stockholders is particularly invited, as exhibiting, on one sheet, a perfect synopsis of the business transactions of the South Carolina canal and railroad company for each half year from the commencement of operations in the year 1830, to the 1st of January, 1845, including the year 1844, of consolidation with the L. C. & C. R. R. company.

This is an interesting paper, exhibiting the number of Locomotives in service; the trips and number of miles performed; the income received, and the fluctuations in the trade and travel on the road, and developing results instructive to those charged with the direction and management of railways; where *economy of expenditure* and *cheapness of transportation* are so dependent on the proper construction and judicious application of the powers of the Locomotive. This is the great desideratum to be attained in all operations where machinery is used, and of vast importance to railroads, as the element on which their triumph over all other conveyances, and success, must finally rest. These views cannot be stronger illustrated than by comparing from the table, the operations of the first with the last half years of the years 1843 and 1844. In the first half years, 15 Locomotives in service, made 2,036 arrivals and departures; ran over 319,968 miles; transported 130,366 bales of cotton and 48,722 passengers, and realized in money, including the freight on merchandise and the mails, \$460,057 35. In the last halves of the same years, 16 Locomotives in service, making 1,904 arrivals and departures, and running 304,752 miles; 132 arrivals and departures, and 14,216 miles less than in the first halves the same years; transported 184,319 bales of cotton, 43,164 passengers, and realized for the road \$515,743 85 in money; shewing that with but one additional engine, and less miles and trips performed, an increase of 53,953 bales of cotton, a decrease of 5,558 in the number of passengers, and an augmentation in the moneyed receipts of \$55,686 50. The decrease in the passengers is explained by the facts of two Methodist Camp Meetings in the spring of 1844, at Ladson's Station and the Cypress, and at which it was estimated there were between 5 and 6,000 attendants. Another comparison between the years 1842 and 1844, will serve to illustrate the powers and advantages of the larger class of Locomotives, six (6) of which have been added the last two years, to the 2d and 3d class engines previously used on the road. In the year 1842, the year previous to the consolidation of the two roads, 14 engines in service, made 1,809 arrivals and departures; performed 286,995 miles; transported 92,336 bales of cotton and 33,925

passengers, and realized in money for the road \$408,704 87.

In 1844, 17 Locomotives are returned as having made 1,964 arrivals and departures, run over 310,812 miles, and transported 186,638 bales of cotton and 54,146 passengers—and realized on the whole, including freight on merchandise and the mail \$532,869 85, shewing with but 3 additional engines, an increase of 94,302 bales of cotton, 20,221 of passengers, and \$124,164 98 on the gross income, being at the rate of 100 per ct. on produce, 60 per ct. on the number of passengers, and 31 per ct. on the moneyed receipts. The increase on the moneyed receipts does not bear the same proportion to the increase on the quantity of the freight and number of passengers, and which is to be explained by the modification and reduction made on the rates of freight and passage in 1844. In 1842, the fare for passengers was 18 per ct.; on merchandise from 12½ to 15 per ct., and on cotton and weight freight, from 30 to 40 per ct. higher than it was in 1844. At the same rate of freights, provided the same amount of business could have been commanded, the increase on the moneyed receipts, on the transportation performed, would have been full 25 per ct. greater.

The subject of the rates for freight and passage on railroads, must be relative, and be governed by the quantity of business and number of passengers offering, and the competition with other common carriers. To meet a competition which is daily increasing from the number of new roads in the United States, which have been constructed, and from the improvements in and new application of machinery, to steam navigation, it will be necessary to be governed in some degree by the fares established by other common carriers, contending for the same business; or forfeit the claim on the South Carolina road to a fair participation in it. By this policy, in regulating a Tariff for freight and passengers, your directors have been governed: and they will continue in the future, as they have in the past, to bestow on this, as on all other subjects, affecting the interests of this company, the consideration of their most matured judgments.

With these Tables, is one shewing the number of grades, and their lengths; with the lengths of the different curves and straight lines; the distance between the different stations and depots, and their relative elevations; with the elevations of each point above tide water; on the road between Branchville and Columbia. A similar table, we have in preparation for the Charleston and Hamburg road; which has not yet been perfected, for the want of the necessary documents.

The Report of Mr. G. B. Lythgoe, the Superintendent of the road, shews that under his vigilant supervision, the track and embankments have been preserved in the same good condition, represented to be in the previous year. He states, however, what has been long since apprehended, that the heads

of the piles, sustaining the cross ties and superstructure, on the Hamburg road, are beginning to exhibit decay, and to obviate this defect, it will become necessary to lay mud sills on the tops of the piles. That, if this work is commenced immediately, its expense may be distributed through consecutive years; and therefore, recommends that 20 miles of the road, for the next four years, be so improved, which will probably involve an increased expense for timber and labor, of \$300 per month.

On the Columbia road, which is generally in good order, it was found indispensable to renew some of the cross ties, between Orangeburg and Branchville, the last spring and summer. As it is but 4 years and 6 months since that section of the road was finished, that fact goes to confirm past convictions that the durability of pine timber at the South, exposed as the cross ties are on the Columbia road, on the surface and but half covered with earth, cannot be depended on to exceed an average of 5 years; and that all timbered superstructures of roads in Southern latitudes, will require renewal within that period, or one-fifth each year for the whole extent. By way of experiment, 6 miles of the Columbia road was constructed of cypress ties; but sufficient time has not yet elapsed to test their superior durability over pine, or their greater economy in the higher price. The durability of timber is a subject of deep interest to railroad companies: particularly as timber superstructures are beginning to claim a preference to those made of materials of a less yielding or elastic character; and has engaged the attention for many years of the successive Board of Directors of the S. C. C. and R. R. company. The process of kyanizing, which was tested to a small extent, seemed to act favorably on the fibres of the wood to which applied; but the problem yet remains unsolved, whether the additional durability imparted, is compensated by the extra expense incurred. The experiment with the mineral process recommended by Dr. Earl, and for which an appropriation was made by the S. C. C. and R. R. Company, Mr. Lythgoe, thus remarks:—"I regret to say, the process of Earling sap timber, will not answer the purpose intended: as we are now compelled to take all we have used, out of the road, as soon as we possibly can, in consequence of its having become so soft and decayed, as to allow the iron to imbed into it, thereby injuring the iron to a considerable extent." The report of Mr. Lythgoe represents that the expense of the maintenance of way on the Hamburg road the last year, has been \$293 per mile; which, including the sum of \$828 expended in ditching and on embankment, equal to an average of \$6 per mile, makes the whole sum \$299 per mile. The expense of maintenance of way on the Columbia branch was but \$138 per mile, including \$424 incurred in ditching and embankments, makes \$144 28-100 per mile. The difference in the expense per mile on the two roads, is explained by the different plan

of construction, and the different ages of the roads; the timber, with the exception of one short section on the Columbia road, not having had time yet to manifest decay or require renewal. The expense of maintenance of way on the Hamburg road, if preserved at the above standard, \$299 per mile, is as low, probably as it can be reduced to; while some addition to the amount incurred for the same objects on the Columbia branch, will become necessary as the age of the road and the business on it increases.

The report of Mr. Darrel, master of the workshops, presents the state and condition of the motive power owned by the company; and a favorable statement of the quantity of work done in the finishing and smithshops and foundry, and on the locomotives rebuilding and repairing, the last year. From his report, it appears he received from his predecessor as master of the shops, 23 locomotives of the 2d and 3d class; enumerating all which bore the name in the yard, and one new boiler finished. Of these locomotives, many of which, had been in the service of the South-Carolina canal and railroad company from its commencement of business in the years '31 and '32. Four are stated to have been in good order; 7 defective, and somewhat disabled, but performing road service; 6 repairing, and rebuilding, and 3 condemned; since which, 3 of those disabled, have run their career and been condemned; or laid up in ordinary for summer examination, and see to what profitable purposes they, or parts of them can be applied. To the above locomotives, have been added the last two years, 6 of Baldwin and Whitney's; 6 wheel connected locomotives of the 2d class. Deducting the 6 which have been condemned, or laid up in ordinary—and one (1) that is rebuilding, 22 may be considered as in a condition to be made fit for road duty, under occasional repairs; from 16 to 17 of which, have been kept in active service during the year ending 31st December, 1844: which is a very large proportion. It has been considered good policy, and particularly by those well acquainted with the delicate mechanism of the locomotive, so easily deranged, that companies should own double the number that they can keep constantly and profitably employed: and the best regulated English and American roads preserve very nearly this proportion. Where the opposite policy is pursued, locomotives often suffer; are soon destroyed, and rendered worthless from the want of timely and effectual reparation. When the business of the road presses, and in no modes of transportation, are the alternations from one extreme to the other, so frequent as on railways, temporary expedients, where there is a deficiency for the time of power, must be resorted to; and engines, though slightly disabled and easily repaired, are too frequently forced from necessity, on another trip to their more permanent injury, if not ruin; or taken in shop late at night, hastily overhauled, and rudely repaired by the light of the torch, so as to be replaced on road, for service, in time next morning. It is difficult, under such ar-

rangements, to preserve the locomotives in the best condition for profitable use; or to conduct the operations at the workshops, and regulate the transportation on the road with economy and satisfaction.

The Joint report of the general Agent, Mr. King, and the agent of transportation, Mr. Hacker, show that this company now have in service, for the very large and increased business which has devolved on it, but 18 passenger and baggage cars; and 293 freight cars; 147 of which, are of 4 wheels with canvass sides, and of inconsiderable burden: the whole of them, not more than equal to accommodate the loads for 2 engines. Of these, one 8 wheel Passenger, one 8 wheel Baggage, thirty-two 8 wheel Box, and fourteen 8 wheel Platform Cars have been added during the year 1844, and at a cost to the Company for wood-work of \$7020, and for wheels and axles—as reported by Master of workshops, \$10,478, making for the whole \$17,498. Both of these officers, and whose duties and responsibilities afford them the best opportunity of forming correct opinions, concur in the necessity of an additional number of Passenger, Baggage and Burden Cars, to do the business of the road to the best advantage, with punctuality, and to the satisfaction of travellers and shippers. The want of more suitable and more enlarged accommodations at the depots at Charleston, Hamburg and Columbia, is the more strongly enforced by their testimony; and while these subjects have engaged the attention of the Board of Directors, whose term of service now expire; they cannot too strongly impress its importance on those who, by your selection, may be their successors in office for the present year. It may involve considerable expenditure in the first instance; but the interests of the Company, and its security and protection from probable heavy loss; and its ability, through active agents, to discharge with exactness and despatch its varied responsibilities as a common carrier, to all who travel and transport on the road, strongly recommend the necessity of more suitable, more commodious, and more permanent buildings at the workshops, and the three important depots at Charleston, Hamburg and Columbia, than at present exist.

At the last session of the Legislature, application was made by many of the citizens of Sumter and Kershaw, for aid in the form of a subscription, to assist in extending the S. C. R. Road, under a provision in its charter, to Camden. That body declined participating in the enterprise as a stockholder, but responded favorably to the application, so far as to authorize this Company to become joint stockholders with the citizens of that section of country through which the Road to Camden was to pass, and as a motive for this Company so to co-operate in the work, an act was passed authorizing the funding at 5 per ct. interest, and on time, of a debt which accrued under the law reducing the stock in the L. C. & C. R. R. Company, and which now stands to the credit of the State in the books of said

Company. A reference to the act will explain more satisfactorily its provisions. To enable the stockholders to act more advisedly on the subject, and at the particular solicitation of many of the citizens of Sumter and Kershaw, who had expressed an interest in the enterprise, a preliminary survey was ordered by the Board of Directors. Mr. Mac Rae, favorably known to the stockholders, was charged with the service, and his report and approximate estimate of the probable cost of the work, is herewith respectfully submitted. His estimate is based on two plans of superstructure. In the one, where a wooden stringer and light iron rail is used, the cost is estimated at \$450,000. In the other, where a heavier T rail is used, and the plan is made to conform to that of the Columbia Road, the cost is put down at \$540,696. In both estimates the present specific duty on rail iron at \$25 a ton is included—amounting to \$60,000 on the first, and \$90,000 on the last estimate. If the tax is remitted, or reduced to a revenue standard, there will be a corresponding decrease in the probable cost of the Road.

The Board of Directors, with much satisfaction, now report to the stockholders, the extension of the Georgia Railroad to Covington, 25 miles beyond its late terminus at Madison; and that the reported progress in the section above, removes all doubts as to the road being completed to Whitehall, the point of junction with the Western and Atlantic Railroad, by September or October next, and in time for the opening of the fall business. At the same period, such is the progress now making with the work on the Western and Atlantic Railroad, that that road will be completed and in operation to the Oostanauly, 84 miles beyond Whitehall and within 56 of the Tennessee River at Chatanooga, and 17 of the Coosa at Rome.

Within the last twelve months the condition of the West Point and Montgomery Railroad has been greatly improved, and active measures taken to extend it some five or six miles east of Chehaw. At the late session of the Legislature of Alabama, the 2 per cent. land fund, and amounting to about \$240,000, was appropriated in equal proportions, and on most favorable terms, to the completion of the West Point and Montgomery Road to the Chattahoochee, and to that of a newly projected road connecting the Coosa, by Will's Creek Valley and the Sand Mountain, with Guntar's Landing on the Tennessee. All these events go to approve the late action and policy of a majority of your Board of Directors in co-operating to the extent of their ability with the Georgia Railroad and Banking Company, and the West Point and Montgomery Railroad Company, for the completion of their respective enterprises, estimating them as important links, in common with that of the South Carolina, in that great chain of railroad intercommunication connecting the extreme eastern with the most south-western extremities of the Union—an enterprise in which not only this Company, but the city of Charleston and State of South Carolina, cannot but feel the deepest interest, and ac-

knowledge the important influence its completion must have on the prosperity of each.

All of which is respectfully submitted by
JAMES GADSDEN, President.

Schuylkill Navigation.—We hope the anticipations of the editor of the U. S. Gazette may be more than realized in the results of this work.

It will be seen by an advertisement in our paper of this morning, that the company are prepared to receive proposals for the enlargement of their work. We congratulate our friends upon their success in obtaining the necessary funds to carry out this interesting improvement. The amount required for present operations has been promptly furnished by our own fellow citizens, who understand the subject, appreciate the importance of the Navigation, and have confidence in its success. We may now look forward to a bright day again in our City Finances, which are so intimately connected with the prosperity of this great work: its completion may also be expected to exercise the happiest influence upon our commerce and manufactures. The Engineers who have furnished the plans and estimates, are well known to us: they are entitled to and enjoy the fullest confidence of this community. According to their reports, an expenditure of one-fourth the present cost of the works, will increase their capacity three-fold. It is estimated by the highest authority, that the cost of transportation will thus be reduced one-third to one-half. There is no longer the slightest reason to doubt that the enlargement and improvement will be vigorously prosecuted to completion. We understand that proposals have already been made on a large portion of the heaviest work, at rates within the estimates of the Engineer, by competent contractors.

Increase of Railway Traffic.—Wills' Liverpool share circular gives a list of 25 Railways which shows an increase of receipts, during the first eight weeks of this year, as compared with the corresponding period of last year, of £100,612. which will give, should the same ratio of increase continue through the year, an increase of £653,678 or over three millions of dollars.

Birmingham and Gloucester, 2,677L.; Chester and Birkenhead, 514L.; Eastern Counties, 2,173L.; Edinburgh and Glasgow, 1,984L.; Glasgow, Paisley, and Greenock, 1,61L.; Glasgow, and Ayr, 1,597L.; Grand Junction, 5164L.; Great North of England, 1,932L.; Great Western, 16,117L.; Liverpool and Manchester, 3,245L.; London and Birmingham, 5,411L.; London and Brighton, 2,618L.; London and South Western, 2,315L.; London and Croydon, 1,214L.; Manchester and Birmingham, 3,413L.; Manchester, Bolton, and Bury, 636L.; Manchester and Leeds, 5,043L.; Midland Railway, 10,314L.; Newcastle and Carlisle, 1,633L.; North Union, 2,889L.; Preston and Wyre, 899L.; Sheffield and Manchester,

1,126L.; South Eastern and Dover, 15,143L.; Ulster, 124L.; York and North Midland, 1,070.—From Mr. J. Will's Liverpool Share Circular.

INSTITUTION OF CIVIL ENGINEERS.

The paper read was "a description of the Great Britain steam ship, with an account of the trial voyages," by Mr. T. R. Guppy, Assoc. Inst. C. E., under whose superintendence the vessel and engines were constructed. The paper first gave an account of the origin of the Great Western Steam Ship Company, by a few of the proprietors of the Great Western Railway, who thought that, when their railway was completed, Bristol would become the natural port for a direct line of communication with New York—hence the building of the Great Western steamer, which succeeded beyond the expectation of the proprietors, with the single exception, that, like many other steamers, the machinery and fuel occupied so great a space, comparatively with that devoted to passengers and goods, as to operate prejudicially in a pecuniary point of view. The company then projected a second ship, and, after much consideration, decided upon building it of iron, with peculiar direct acting engines; and, in consequence of the apparent success of the experimental Archimedes, they determined upon using the screw propeller. The details of the construction, with the dimensions, were then given: of the latter, as they have so repeatedly been published, it will suffice to mention only a few. The length of keel, 289 feet—length aloft, 322 feet; main breadth, 50 feet 6 inches; depth of hold, 32 feet 6 inches; tonnage, 3,444 tons. The weight of iron used in the hull is 1,040 tons; the weight of wood work, in decks, &c., is 370 tons; weight of the engines and boilers, without water, is 520 tons; the total weight is, therefore 1,930 tons. She will take 1000 tons of coal, and 1000 tons of measurement goods, at a draft of 17 ft. water forward, and 17 ft. 6 in. aft. Our limits will not permit us to enter into the details of the construction, which were fully given in the paper, and amply illustrated by numerous drawings and models to a large scale, covering the walls and table. The advantages of the water-tight bulkheads in preventing dangers from a leak, in any one compartment, in case of fire, and for tying and stiffening the vessel, were strongly insisted upon. The action of the screw propeller was then fully treated, and from the tabulated result of the experiments, on several kinds of screws, it appeared, that, with the Archimedes the greatest velocity of the vessel (which was 8.375 knots) was attained with a screw 5 feet 9 inches in diameter, the angle of which was 19½ degrees. The slip was 21 per cent., and the ratio of speed of the vessel to that of the screw, was as .787 to 1. Subsequent alterations in form gave improved results, and governed the form of the screw made for the Great Britain. It was of wrought iron, with six arms, 15 feet 6 inches in diameter, with a pitch, or helix, of 25 feet to one revolution, which equals an angle of 28 degrees; the

area of the six palms was 561 feet, and its weight was 77 cwt. The engines employed to drive this screw consisted of four cylinders, each 88 inches in diameter, with six feet stroke, working with steam at 4½ lbs. pressure, and cutting it off at one-sixth—the length of the stroke. The connecting rods act directly in pairs upon crank pins, at either end of the main shaft, 17 feet long by 28 inches in diameter. Upon the main shaft is a toothed drum, 16 feet diameter, around which work four pitched chains, encircling also a lower drum, 6 feet in diameter, upon the propeller shaft. The chains work quietly and smoothly; and, when the engines are making 18 revolutions per minute, the speed being nearly 2.95 to 1, the screw makes about 53 revolutions per minute. A considerable portion of this shafting was 30 inches diameter, hollow, and formed of two courses of plates, three-fourths of an inch thick, rivetted together.

The slip of the screw was also discussed at length, and it appeared that in one trial (the engines making 18½ revolution, the speed of the vessel being 12½ knots) the speed of the vessel was as .907 to one of the screw. The details of the dimensions of the boilers were given, but owing to the seasickness of the stokers on the voyage, no account of the consumption of fuel could be given. The account of the trial trips in the British Channel, and of the voyage from Bristol to London, abounded in curious facts. It appeared that with the engines making 18½ revolutions, the speed of the vessel would be 11½ knots, and the slip of the screw 13 per cent.; even during the voyage round, with a heavy gale dead against her, she made upwards of 9½ knots. The ship behaved remarkably well, steered well, and, although disadvantageously loaded, with no weight in her bottom, she rolled easily. In the heaviest weather the engines worked uniformly, and never made those variations in speed, which are observed in steamboats when the paddle-wheels are alternately plunged deeply and then nearly out of the water.

In the conversation which ensued, and in which Sir Charles Napier, Captain Hosken, and several naval men, as well as the engineers, took part, the principles and the comparative advantages of the paddles and the screw were discussed. It was allowed, that for sea-going steamers, the screw possessed great advantages, and particularly for war steamers, the present construction of which Sir Charles Napier condemned in toto. Few men have had more opportunities of forming a more accurate opinion, as he has directed his attention to the subject for upwards of twenty years, having been interested in, and commanded in her first voyage, in 1821, the Aaron Manby, which was the first iron steam vessel that ever went to sea, and which conveyed a cargo from London to Paris direct, without transshipment. Capt. Hosken gave an unqualified approval of the Great Britain as a weatherly ship, and of the screw as a means of propulsion at sea. The discussion was adjourned until next Tuesday, (March 11).—Mining Journal.

ENGLISH RAILROAD SHARE-LIST.

NAME OF RAILWAY.	Miles opened.	Total sums, in pounds, authorized to be raised by shares.	Total sums, in pounds, authorized to be raised by loan or mortgage.	Total sums, in pounds, expended at dates of latest balance sheets.	Cost of working in pounds for six months as stated in latest balance sheets.	Total earnings, in pounds, for six months as stated in latest balance sheet.	Dividend at last meeting.		Paid on share.	Value of share.	NEW AND PROPOSED RAILWAYS.	Share Capital.
							Per share.	Per cent. per annum.				
Arboath and Forfar.....	15	102,000	35,000	138,870	.....	.....	0 12 6	2 10 0	25	27	Aberdeen.....	1,600,000
Birmingham and Gloucester.....	55	1,187,500	407,336	1,500,806	39,261	53,203	1 5 0	2 10 0	100	100	Barnsley Junction.....	200,000
Brandling Junction.....	23	161,700	365,470	481,452	.....	.....	.....	4 10 0	50	54	Belfast and Ballymena....	385,000
Bristol and Gloucester.....	37	400,000	211,000	.....	.....	.....	.....	nihil.	30	36	Blackburn and Accrington.	400,000
Chester and Birkenhead.....	14	750,000	143,170	518,989	5,856	13,148	0 8 6	1 14 0	50	32	Birk. and Ches. Junction..	1,000,000
Dublin and Drogheda.....	31	450,000	150,000	500,869	.....	.....	.....	nihil.	55	72	Bolt., Wigan and Liverpool	800,000
Dublin and Kingston.....	6	200,000	152,200	359,000	.....	.....	6 0 0	6 0 0	100	166	Caledonian.....	1,800,000
Dundee and Arbroath.....	16	100,000	49,445	153,416	2,989	6,993	1 5 0	5 0 0	25	29	Cambridge and Lincoln...	1,250,000
Durham and Sunderland.....	18	169,350	124,055	270,392	9,889	17,702	.....	nihil.	34	29	Chatham and Portsmouth..	5,000,000
East County and North and East.....	86	4,443,200	1,341,155	3,931,905	47,385	118,726	1 6 6	.....	45	57	Chester and Wrexham....	120,000
Edinburg and Glasgow.....	46	1,125,000	375,000	1,649,523	29,429	55,866	1 2 6	4 10 0	50	57	Churnet valley.....	1,800,000
Glasgow, Paisley and Ayr.....	51	937,500	1,066,951	12,446	36,736	1 2 6	4 10 0	50	60	30	Direct Northern to York...	4,000,000
Glasgow, Paisley and Greenock.....	22	650,000	216,666	787,884	11,572	23,177	0 5 0	2 0 0	25	12	Dublin and Belfast.....	950,000
Grand Junction.....	104	2,478,712	2,453,169	84,309	195,080	5 0 0	10 0 0	100	210	166	Dundee and Perth.....	250,000
Great North of England.....	45	969,000	581,017	1,262,518	12,201	36,189	1 12 6	3 5 0	100	119	Edinburg and Northern...	800,000
Great Western.....	22	4,650,000	3,679,343	7,272,539	132,235	369,904	3 10 0	7 0 0	75	138	Ely and Bedford.....	270,000
Hartlepool.....	15	438,000	155,540	719,205	.....	.....	.....	8 0 0	100	.....	Glasgow, Dum. & Carlisle.	1,300,000
Leicester and Swannington.....	16	140,000	.....	140,000	2,207	6,317	1 5 0	5 0 0	50	.....	Gt. South and West Ext...	1,200,000
Liverpool and Manchester.....	32	1,209,000	497,750	1,739,835	57,239	117,559	5 0 0	10 0 0	100	203	Gt. Grimsby and Sheffield.	600,000
Llanelli.....	27	200,000	44,000	221,624	.....	.....	1 0 0	2 0 0	87	.....	Harwich and E. coun. Jun.	160,000
London and Birmingham.....	12	6,874,976	1,928,845	6,393,468	92,823	405,768	10 0 0	2 0 0	100	218	Huddersfield & M. r. & cl.	600,000
London and Blackwall.....	3	804,000	266,000	1,315,640	15,978	23,870	.....	.....	16	6	Kendal and Windermere...	125,000
London and Brighton.....	56	1,793,800	998,350	2,630,451	29,372	84,880	0 12 0	2 8 0	50	47	Leeds and Dewsbury....	400,000
London and Croyden.....	8	550,000	229,000	761,885	7,583	10,545	0 5 0	2 10 0	14	17	Leeds and Thirsk.....	800,000
London and Greenwich.....	3	759,383	233,300	1,040,930	15,193	28,933	.....	nihil.	13	10	Liv. Ormskirk and Preston	600,000
London and South Western.....	92	2,222,100	630,100	2,596,291	68,457	150,469	1 12 6	6 10 0	41	73	London and Portsmouth...	1,750,000
Manchester and Birmingham.....	31	2,100,000	690,586	1,923,699	15,397	58,162	1 0 6	5 0 0	40	48	London and York.....	5,000,000
Manchester and Bolton.....	10	778,100	197,730	773,743	8,585	21,140	2 2 0	4 10 0	93	110	Londonderry & Enniskillen	500,000
Manchester and Leeds and Hull.....	81	2,937,500	1,943,932	3,921,593	46,653	156,761	7 1 10	.....	60	88	Lynn and Ely.....	200,000
Midland railway.....	178	5,158,900	1,719,630	6,279,056	76,983	281,898	.....	.....	100	96	Manchester, Bury and Ross	300,000
Newcastle and Carlisle.....	61	878,240	188,563	1,135,069	26,499	73,947	4 0 0	4 0 0	100	105	Manchester and Buxton...	250,000
Newcastle and Darlington.....	23	500,000	.....	405,728	.....	.....	.....	nihil.	21	49	Mullingar and Athlone...	.....
Newcastle and North Shields.....	7	150,000	153,876	309,629	8,943	18,466	2 10 0	6 16 8	100	104	Newcastle and Berwick...	700,000
North Union.....	39	739,201	308,306	1,015,447	9,071	37,794	0 16 0	8 0 0	20	39	Richmond & W. End Junc.	.....
Paris and Orleans.....	82	1,600,000	400,000	1,978,415	31,247	91,171	.....	8 0 0	20	38	Scottish Central.....	700,000
Paris and Rouen.....	84	1,440,000	.....	.....	4,191	7,066	.....	nihil.	50	18	Sheffield and Lincolnshire.	650,000
Preston and Wyre.....	19	830,000	179,852	355,161	11,895	14,876	.....	nihil.	82	93	Shrewsbury and Gd. Junc.	400,000
Sheffield and Manchester.....	19	1,150,000	311,759	951,455	40,993	81,482	0 10 6	2 2 0	50	39	Shrew. Wolv. Dudley & B.	900,000
South Eastern.....	88	2,996,000	1,530,277	3,464,172	8,509	18,414	0 0 0	6 5 0	100	55	Trent Valley.....	900,000
Taff Vale.....	30	465,000	154,785	590,066	5,401	13,856	0 15 0	5 1 8	29	37	West London Extension...	64,000
Ulster.....	25	519,150	20,000	348,626	.....	.....	.....	nihil.	16	25	West Yorkshire.....	1,000,000
Yarmouth and Norwich.....	20	187,500	62,500	230,250	27,132	55,752	2 10 0	10 0 0	50	100	Whitehaven and Maryport	100,000
York and N. Mid. and Leeds and Selby	28	1,062,500	167,500	676,644	.....	.....	.....	.....	.....	.....	FRENCH RAILWAYS.	
											Boulogne and Amiens....	1,500,000
											Central of France.....	1,280,000
											Lyons and Avignon.....	2,400,000
											Orleans, Tours & Bordeaux	2,000,000
											Paris and Lyons.....	2,500,000
											Paris and Orleans.....	1,600,000
											Paris and Rouen.....	1,400,000

Steam and Miscellaneous.

Steam and Miscellaneous.							NAME OF COMPANY.		Num. of shares. Am't. of share. Amount paid. Div. p.c. per ann. Last price. Present price.					
NAME OF COMPANY.	Num. of shares.	Am't. of share.	Amount paid.	Div. p.c. per ann.	Last price.	Present price.			Num. of shares.	Am't. of share.	Amount paid.	Div. p.c. per ann.	Last price.	Present price.
Anglo Mexican Mint....	10,000	10	10	.....	15½	15½	Loughborough.....	70	142½	442½	70	1140		
Anti Dry Rot.....	10,000	.....	18½	.....	2	.....	Monmouthshire.....	2,409	100	100	10	160	160	
Australian Trust Company	5,700	100	35	.....	34½	.....	Melton Mowbray.....	250	100	100	10	117	117	
General Steam Navigation	20,000	15	14	10	27½	27	Mersey and Irwell.....	500	100	100	10			
Gt Western Steam Pa.....	.....	.....	100	.....	25	.....	Macclesfield.....	3,000	100	100	2½	15	15	
Metropolitan Wood Pav..	15,000	10	6	5	6½	.....	Neath.....	247	100	100	17	365	365	
Patent Elastic Pav.....	10,000	1	1	5	1½	.....	Oxford.....	1,786	100	100	30	505		
Peninsular and Oriental..	11,493	50	50	7	64½	65	Regents or London.....	21,418	33½	33½	2½	25	25	
Ditto.....	3,200	50	40	7	.....	.....	Shropshire.....	500	125	125	6	120	120	
Polytechnic Institution.....	.....	.....	.....	6	.....	.....	Somerset coal.....	800	150	150	7½	123	123	
Reversionary Int. Soc.....	5,320	100	100	4½	104	104	Stafford and Worcester...	700	140	140	25	480	480	
R. Mail Steam Packet.....	15,000	100	60	.....	36½	37	Shrewsbury.....	500	125	125	12	230	230	*
South Western Steam.....	4,000	25	5	.....	.....	.....	Stourbridge.....	300	145	145	14	360	360	
Ship Owners' Towing.....	3,000	10	7½	10	15	.....	Stroudwater.....	200	150	150	19			
Thames Tunnel.....	4,000	50	50	.....	.....	.....	Swansea.....	533	100	100	15	240	240	
University College.....	1,500	100	100	.....	.....	.....	Sewer & Why & Rail Av.	3,762	26½	26½	5½	30	30	
							Trent and Mersey.....	2,600	50	50	65	495		
							Thames and Medway.....	8,149	19½	19½	.....	10	10	
							Warwick and Birmingham.	1,000	100	100	10½	167		
							Warwick and Napton.....	980	100	100	8½	122		
Water Works.														
							Birmingham.....	4,800	25	25	3½	28	28	
							East London.....	4,433	100	100	8	223	223	
							Grand Junction.....	5,500	av.	41	2-3	7½	88	90
							New River L. B. Ann.....	1,500	.....	30	2½			
							Manchester and Salford...	6,486	av.	100	5	55	55	
							Vauxhall, lt. S. London...	1,000	.....	100	5	55	55	
							West Middlesex.....	8,294	av.	63½	6	126	127	
Docks.														
							Commercial Dock.....	1,065	100	100	3	80		
							East and West India.....	.....	sto.	.....	5½	137		
							London.....	3,238,310	sto.	.....	4½	114½	115	
							St. Katharine.....	1,352,752	sto.	.....	5	116	171	
							Southampton.....	7,000	50	50	.....		

AMERICAN STATE WORKS AND CANALS, ETC.

STATE WORKS.		Length in miles.	Cost.	1843.		1844.		The State Canals are all 4 feet deep, and the locks are 13 to 17 feet wide, and 80 to 90 feet in length.
				Income.	Expend.	Income.	Expend.	
N. Y.	1 Black river canal.....	35	1,524,967					The six millions paid to the canal fund from auction and salt duties are not included in the estimate of cost. The Genesee valley and the Black river canals require large sums for their completion, the interest of which additional sum is much greater than the estimated gross income of these canals when finished. The sums required to complete these two canals are \$2,000,000 and \$600,000, making their total cost when finished \$5,553,000 and \$2,409,000; an expenditure incurred on estimated incomes (admitted to be liberal,) of \$39,000 and \$14,000 respectively. The total receipts from the works of Pennsylvania for 1843 were \$1,019,401; for 1844 \$1,164,326, and the cost about 30 millions. The receipts for 1844 were as follows: Canal tolls, - - - - - 578,404 Railroad tolls, - - - - - 252,855 Motive power, - - - - - 319,590 Trucks, - - - - - 13,477 of which \$585,923 is from 118 miles of railroad, and \$578,404 from 550 miles of canal. The canals of Ohio are supported by a property tax of 5½ mills on the dollar. There are 853 miles of canal in the State, which yielded in 1843 \$471,623, and in 1844 \$515,393, the cost, 1st Jan. '43 being \$15,577,233. The increase of '44 over '43 is only \$43,770, though the year '44 has exhibited a greater increase throughout the country than ever before known. These 21 millions on sundry works yield no income whatever. The central railroad yields above 6 per cent., and is the only State work—the Erie canal excepted—which is able to stand alone.
"	2 Cayuga and Seneca.....	21	237,000	16,557	10,953	24,618	14,443	
"	3 Champlain canal.....	64	1,251,664	102,308		116,739		
"	4 Chemung.....	23	684,600	8,140	14,486	14,385	12,740	
"	5 Chenango.....	97	2,420,000	16,195	15,967	22,179	15,960	
"	6 Crooked lake.....	8	156,777	461	3,674	1,498	3,951	
"	7 Erie—enlargement of.....	363	12,648,852	1,880,316				
"	8 Genesee valley.....	120	3,739,000					
"	9 52 miles opened, cost \$1,500,000.....			12,292	13,819	19,641	15,557	
"	10 Oneida lake.....	6	50,000	225	2,239	621	1,636	
"	11 Oswego.....	38	565,437	29,147	22,712	56,165	28,599	
Pa.	12 Beaver division canal.....	25				7,381	5,386	The receipts for 1844 were as follows: Canal tolls, - - - - - 578,404 Railroad tolls, - - - - - 252,855 Motive power, - - - - - 319,590 Trucks, - - - - - 13,477 of which \$585,923 is from 118 miles of railroad, and \$578,404 from 550 miles of canal. The canals of Ohio are supported by a property tax of 5½ mills on the dollar. There are 853 miles of canal in the State, which yielded in 1843 \$471,623, and in 1844 \$515,393, the cost, 1st Jan. '43 being \$15,577,233. The increase of '44 over '43 is only \$43,770, though the year '44 has exhibited a greater increase throughout the country than ever before known. These 21 millions on sundry works yield no income whatever. The central railroad yields above 6 per cent., and is the only State work—the Erie canal excepted—which is able to stand alone.
"	13 Delaware canal.....	60				109,278	22,870	
"	14 French creek.....	45						
"	15 Seneca river towing path.....		69,276			381		
"	16 Columbia railroad.....	82				443,336	205,067	
"	17 Eastern division.....	36				179,781	138,915	
"	18 Juniata canal.....	93						
"	19 Portage railroad.....	130				351,102	248,943	
"	20 Western division canal.....	105						
"	21 North branch Susquehanna canal.....	73				101,949	57,633	
"	22 West " " ".....	72						
Ohio	23 Hocking canal.....	56	975,130	4,757		5,286	4,139	The canals of Ohio are supported by a property tax of 5½ mills on the dollar. There are 853 miles of canal in the State, which yielded in 1843 \$471,623, and in 1844 \$515,393, the cost, 1st Jan. '43 being \$15,577,233. The increase of '44 over '43 is only \$43,770, though the year '44 has exhibited a greater increase throughout the country than ever before known. These 21 millions on sundry works yield no income whatever. The central railroad yields above 6 per cent., and is the only State work—the Erie canal excepted—which is able to stand alone.
"	24 Miami canal.....	85	1,660,742	68,640	38,826	77,844	22,341	
"	25 Miami extension.....	105	2,856,636	8,291		12,723	14,741	
"	26 Miami northern division.....	35	322,000			unfin'd.		
"	27 Muskingum.....	91	1,627,318	23,167		29,385	15,027	
"	28 Ohio.....	334	4,600,000	322,754	123,398	343,711	113,210	
"	29 Wabash.....	91	3,028,340	35,922	6,400	48,589	12,817	
"	30 Walhonding.....	25	607,269	838	39,005	1,977	1,338	
"	31 Western road.....	31	255,015	7,254	1,782	8,747	2,929	
Ind.	32 Sundry works.....		11,000,000					
"	33 Maumee canal.....							The canals of Ohio are supported by a property tax of 5½ mills on the dollar. There are 853 miles of canal in the State, which yielded in 1843 \$471,623, and in 1844 \$515,393, the cost, 1st Jan. '43 being \$15,577,233. The increase of '44 over '43 is only \$43,770, though the year '44 has exhibited a greater increase throughout the country than ever before known. These 21 millions on sundry works yield no income whatever. The central railroad yields above 6 per cent., and is the only State work—the Erie canal excepted—which is able to stand alone.
Ill.	34 Sundry works.....		10,000,000					
Mich.	35 Central railroad.....	110	1,842,308	149,987	75,960	211,170	89,420	
"	36 Southern railroad.....	68	936,295	24,064	7,907	60,341	70,000	

CANALS.		Length in miles.	Cost.	1843.		Div. per cent.	1844.		Div. per cent.	Value of stock.	REMARKS.
				Gross.	Nett.		Gross.	Nett.			
	Blackstone.....										We may, perhaps, at some future time be enabled to give the particulars of all these canals. The Chesapeake and Ohio canal is not yet completed to the coal mines, hence its trifling income. The enlargement of the Schuylkill canal has been commenced. The Morris canal was lately sold for one million, about one-fourth of its cost. It is said in the papers that it is to be enlarged. We have seen no report, nor heard of the appointment of any engineer.
	Bald Eagle Navigation.....	25	400,000								
	Beaver and Sandy, (part).....		1,000,000								
	Charleston, (S. C.).....										
	Chesapeake and Ohio.....	184	12,370,470	47,637							
	Conestoga.....	12	300,000								
	Delaware and Chesapeake.....	13								26	
	Schuylkill.....	108	3,500,000	279,795	102,221		190,693	120,624		31	
	Farmington.....										
	James river and Kenhawa.....										
	Middlesex.....										We may, perhaps, at some future time be enabled to give the particulars of all these canals. The Chesapeake and Ohio canal is not yet completed to the coal mines, hence its trifling income. The enlargement of the Schuylkill canal has been commenced. The Morris canal was lately sold for one million, about one-fourth of its cost. It is said in the papers that it is to be enlarged. We have seen no report, nor heard of the appointment of any engineer.
	Port Deposit.....	10	200,000								
	Delaware and Raritan.....	43	2,900,000	99,623	53,327		131,491	84,455			
	Southwark.....		300,000								
	Tide Water.....	45	2,900,000								
	Union.....	80	2,000,000								
	Morris.....	101	1,000,000							28	
	Dismal Swamp.....										

CANADIAN CANALS.		Length in miles.	No. of locks.	Lockage in feet.	Size of locks.			Width of canal.		Estimate.	Expended to Sept. 1843.	Income.	
					Length of chamber.	Width.	Depth on mitre sill.	Bottom.	Surface.			1843.	1844.
The Welland canal.....					feet.	feet.	feet.	feet.	feet.	3,948,572	2,485,572	64,658	
{ Main trunk from Port Colborne to Port Dalhousie.....		28	31	328	150	26 1-2	8 1-2	45	81				
{ Junction branch to Dunville.....		21	1	6	150	26 1-2	8 1-2	35	71				
{ Broad creek branch to Port Maitland.....		1 1-2	1	6	200	45	9	45	85				
The St. Lawrence canal.....													
{ Galops and Port Cardinal.....		2	2	7	200	45	9	50	90				
{ Rapid Plat.....		4	2	11 1-2	200	45	9	50	90	672,498	973		
{ Farren's point.....		3-4	1	3 1-2	200	45	9	50	90				
Cornwall, passing the Long Sault rapids.....		11 1-2	7	48	200	55	9	100	150	865,372	1,665,663		
Beauharnois, do. Coteau, Cedars and Cascades road.....		11 1-4	9	82 1-2	200	45	9	80	120	1,190,087	275,426		
Lachine, do. Lachine rapids.....		8 1-2	5	44 1-2	200	45	9	80	120	old canal.	400,000	29,288	
Enlargement of do.....										1,001,333	64,439		
Total from lake Erie to the sea.....		12	57	525									
Chambly.....		66	9	74	120	24	6	36	60	200,000	440,000	1,409	

COAL COMPANIES.		Length in miles.	R. rd. Canals.	Cost.	1843.		Div. per cent.	1844.		Div. per cent.	Value of stock.	REMARKS.
					Gross.	Nett.		Gross.	Nett.			
	Delaware and Hudson.....	16	108	2,800,000	930,203	196,702	10				130	
	Lehigh.....	20	72	6,000,000							31	

AMERICAN RAILROADS.													SALES.	
Me.	RAILROADS.	Length in miles.	Cost.	Loans and debts.	Number of shares.	Paid on share	1943.		Div. per cent.	1944.		Div. per cent.	Previ- ous prices	Week ending April 23d. Shares. Price
							Gross.	Nett.		Gross.	Nett.			
N. H.	1 Portland, Saco and Portsmouth.	50	1,200,000				89,997	47,166	7	124,497	74,841	6	113½	102
Mass.	2 Concord.	35	750,000									12	70½	139½
"	3 Boston and Maine.	56	1,485,461				178,745	68,499	6	233,101	86,401	6½	110½	112½
"	4 Boston and Maine extension.	17 1-4	455,703	unfin.										
"	5 Boston and Lowell.	26	1,863,746				277,315	144,000	8	316,909	147,615	8	120½	130
"	6 Boston and Providence.	41	1,886,135	none.	18,600	100	233,388	110,823	6	282,701	156,109	6	108½	109½
"	7 Boston and Worcester.	44	2,914,078				4 0,141	162,000	6	428,437	195,163	7½	116½	117½
"	8 Berkshire.	21	250,000	not stated				17,500	7	17,737				
"	9 Charlestown branch.		280,260						13	34,654	13,971	5½	70½	82½
"	10 Eastern.	54	2,388,631				279,563	140,595	6	337,238	227,920	8	109½	109
"	11 Fitchburg.	50	1,150,000	just opn'd						42,759	26,835		120	124
"	12 Nashua and Lowell.	14 1-2	380,000				84,079		8	94,588	34,944	10	121	126½
"	13 New Bedford and Taunton.	20	430,962				50,671	24,000	6	64,998	24,000	6		
"	14 Northampton and Springfield.		172,883	unfin.										
"	15 Norwich and Worcester.	59	2,170,366	900,000	16,535	100	162,336	24,871		230,674	99,464	3	70½	72
"	16 Old Colony.		87,820	unfin.									102	104
"	17 Stoughton branch.	4	63,075	unfin.										
"	18 Taunton branch.	11	250,000					20,000	8	96,687	20,000	8	118	
"	19 Vermont and Massachusetts.													
"	20 West Stockbridge.	3	41,516	200		100						4		
"	21 Western, (117 miles in Mass.)	156	7,686,202	4,686,202	30,000		573,882	284,432		753,753	439,679	3	102½	101½
"	22 Worcester branch to Milbury.		8,431	506										
"	23 Housatonic, (10 months.)	74	1,244,123							150,000			82	
Con.	24 Hartford and New Haven.	38	1,100,000	100,000	10,000	100						6	89	94½
"	25 Hartford and Springfield.	25 1-2	600,000	400,000	2,000	100								
"	26 Stonington, (year ending 1st Sept.)	48	2,600,000	650,000	13,000	100	113,889			154,724	79,845		41	39½
N. Y.	27 Attica and Buffalo.	31	336,211				45,896	7,522		73,248	48,033	0		
"	28 Auburn and Rochester.	78	1,796,342	200,000	14,000	100	189,693	112,000		237,667	152,007	6	106	
"	29 Auburn and Syracuse.	26	766,657			133½	86,291	27,334		96,738	52,544	6	116	
"	30 Buffalo and Niagara.	22	200,000		1,500								100	
"	31 Erie, (446 miles.)		5,000,000										31½	29
"	32 Erie, opened.	53						48,000		126,020	59,075			
"	33 Harlem.	26	1,206,231							140,685	62,399		70	72
"	34 Hudson and Berkshire.	31	575,613			50				35,029	1,941	0	14	
"	35 Long Island.	96	1,610,221	392,340	29,846					153,456	58,996	0	75½	76
"	36 Mohawk and Hudson.	17	1,317,893	400,000	10,000	100	69,948	58,780		79,804	45,763	0	64½	61
"	37 Saratoga and Schenectady.	22	303,658				42,242	3,000	1	34,666	8,455	0		
"	38 Schenectady and Troy.	20 1-2	640,800				28,043			32,646	6,365	0		
"	39 Syracuse and Utica.	53	1,115,897	none.	16,000	62½	163,701	72,000		192,061	120,992	8	115	
"	40 Tonawanda.	43	727,332				76,227			114,177	75,865	5		
"	41 Troy and Greenbush.	6	180,000											
"	42 Troy and Saratoga.	25	475,801				44,325	21,000		38,502	9,971	2½		
"	43 Utica and Schenectady.	78	2,168,165	none.	20,000	100	277,164	180,000	9	331,932	199,094	8	129	
N. J.	44 Camden and Amboy.	61	3,200,000				682,832	383,880		784,191	404,956		110½	111
"	45 Elizabethtown and Somerville.	26	500,000											
"	46 Morris and Essex.													
"	47 New Jersey.	34	2,000,000										93½	
"	48 Paterson.	16	500,000									6	85	
Pa.	49 Beaver Meadow.	26	1,000,000											
"	50 Cumberland Valley.	46	1,250,000											
"	51 Harrisburg and Lancaster.	36	860,000										30	
"	52 Hazleton branch.	10	120,000											
"	53 Little Schuylkill.	29	900,000											
"	54 Blossburg and Corning.	40	600,000											
"	55 Mauch Chunk.	9	100,000											
"	56 Minehill and Schuylkill Haven.	18	315,000						12				143½	
"	57 Norristown.	20	800,000										6½	7
"	58 Philadelphia and Trenton.	30	400,000										104	
"	59 Pottsville and Danville.	29 1-2	1,500,000											
"	60 Reading.	94	9,457,570	7,447,570	40,200	50				597,613	343,511		50½	49
"	61 Schuylkill valley.	10	1,000,000											
"	62 Williamsport and Elmira.	25	400,000				20,000							
"	63 Philadelphia and Baltimore.	93	4,400,000				43,043	200,000			210,000		43½	42
Del.	64 Frenchtown.	16	600,000											
Md.	65 Baltimore and Ohio, (1st Oct.)	188	7,623,600				575,235	279,402		658,620	346,946		48½	50½
"	66 Baltimore and Susquehanna.	58	3,000,000										5	6
"	67 Baltimore and Washington.	38	1,800,000				177,227	71,691		212,129	104,529		84	
Va.	68 Greensville and Roanoke.	17 12	260,000											
"	69 Petersburg and Roanoke.	60	969,880							122,871	72,898	3		
"	70 Portsmouth and Roanoke.	78 1-2	850,000											
"	71 Richmond and Fredericksburg.	61 1-2	1,200,000											
"	72 Richmond and Petersburg.	22 1-2	700,000											
"	73 Winchester and Potomac.	32	500,000											
N. C.	74 Raleigh and Gaston.	84 1-2	1,360,000											
"	75 Wilmington and Raleigh.	161	1,800,000											
S. C.	76 South Carolina.	136	5,671,452		34,410	75				532,871	140,196	5		
"	77 Columbia.	66					201,464	77,456		328,425	180,704			
Ga.	78 Central.	190	2,581,723							227,532	93,190			
"	79 Georgia.	147 1-2	2,650,000				248,026	158,207		248,096	147,523			
Ky.	80 Lexington and Ohio.	40	500,000											
Ohio	81 Little Miami.	40	450,000											
"	82 Mad river.	40	400,000											
Ind.	83 Madison and Indianapolis.	56	152,000											
Can.	84 Champlain and St. Lawrence.	15	212,000					12,000		58,000	24,000		110	

Correspondents will oblige us by sending in their communications by Monday morning at latest.

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AMERICAN RAILROAD JOURNAL.

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Thursday, April 24, 1845.

NEW YORK AND ALBANY RAILROAD.

The passage of the following very important resolution would seem to render the construction of a railroad hence to Albany almost certain. The complete failure of the Hudson and Mohawk railroad prevented the citizens of Albany from embarking in similar projects for some years, but the success of their efforts to aid the Western railroad has fortunately shown them that skill and character can succeed in undertakings far less promising than those which have turned out worthless where these attributes existed only in minute quantities. We have nothing definite as to the charters which are asked for by the rival companies.

At a meeting of the common council of the city of Albany, held at the city hall in said city, on the 13th day of April, 1845: present the mayor and recorder, aldermen Archer, Bleecker, Coley, Goold, Haswell, Hanson, McCollom, McKnight, Penuy, Phelps, Pruyn, Ramsey, Spears and Wescott.

His hon. the recorder offered the following resolution, which was unanimously adopted:

Whereas, an application is now pending before the legislature for an act to provide for the construction of a railroad from the city of New York to the city of Albany, on the east side of the Hudson river,

And, whereas the establishment of such a communication with the commercial metropolis of the State is, in the opinion of the board, highly desirable, and would tend greatly to promote the interests and prosperity of Albany,

Resolved, therefore, that the common council of this city, in case of the passage of the act aforesaid, will afford all the facilities and assistance in their power towards the construction of said road, and for that purpose consent and agree to take on their part the like action, to extend aid to the same, by the loan of the credit of the city, in the same manner, and to the like extent and amount, as was heretofore done in relation to the Albany and West Stockbridge railroad. A true extract from the minutes.

J. H. H. PARSONS, Clerk Com. Coun.

RAILROAD IRON.

The Portland Advertiser shrewdly observes that, by the time they want their iron, say a year or two hence, the price will be considerably lower than at present. We perceive by our late railway journals, that purchases and orders are to the smallest possible extent in England, and, when we consider that the average price two years ago was £8, and that it is now reported at £14 per ton, it is pretty clear that competition in England will remove this veto on the railway system in the United States. We are sorry to say that we rely on competition in England; for the American iron-masters appear to consider railroad iron as unworthy their notice. We have understood from pretty good authority that not a bar of

T rail has yet been rolled in the three great anthracite and iron districts of Pennsylvania! Indeed our informant could not ascertain that even flat bars had been rolled in the "iron region" of the United States! The exorbitant price at this moment effectually deters any new undertakings, as a reaction is naturally expected; but those works which for the last year or two have been holding out such large promises, might have shown us something, for we have not heard of a single mile of railway of American T rail which is traversed by the locomotive. In judging of the price hereafter, it must be remembered, that the consumption of iron is increasing from a variety of causes, and that the extreme low prices of 1844 are almost as unlikely as they are certainly undesirable. In the course of twelve months we hope that rails may be quoted at £8 per ton, a fair price in 1835, and a profitable one now. As we observed some time since, the high price of railroad iron will be severely felt by our western friends in Ohio, Michigan, and Indiana, and by the agricultural interest generally, for that first of all pursuits has more to expect from the extension of the railway system than from any other course, to raise it from the depressed condition in which it lies.

ZINC MINES OF NEW JERSEY.

Mr. Francis Alger, of South Boston, a gentleman well known for his devotion to the study of mineralogy, has published a small pamphlet on the zinc mines of Franklin, Sussex county, N. Jersey. This district has long been famous among geologists, and now bids fair to become as interesting to the manufacturer. These beds extend about four miles, and are supposed to contain "the only deposit of oxide of zinc at present known to mineralogists."

"Taking the specific gravity of the red oxide at 5.420, we have 340 lbs., (very nearly) the weight of each cubic foot. One-half of this is 170 lbs., or the quantity of red oxide in each cubic foot of the ore, as it averages. Oxide of zinc contains 81 per cent. of pure metal; consequently 170 lbs. of the ore contain 137 lbs. pure metallic zinc. The length of the bed visibly exposed at Sterling is more than 600 ft.; its depth we will assume to be 100 ft., which will be as deep as it can be conveniently drained. Its average width cannot be less than 4 ft. Now, $600 \times 4 \times 100 = 240,000$ cubic feet of ore, each of which contains 170 lbs. of red oxide. Again, $240,000 \times 170 = 40,800,000$ lbs. of red oxide, which, yielding 81 per cent. of pure metal, gives of it, 33,048,000 lbs. This, multiplied by 6 cents, the average market value of zinc, will give \$1,982,880—the value of zinc within the limits mentioned. Nature has provided every local advantage that could be wished for the easy exploration of the mines; and embracing every expense preparatory to the reduction of the ore, including its reduction also, it is pretty well ascertained that the metal may be obtained in the large way at a cost not exceeding three cents per pound. Here, then, there would be a clear profit, deducting the cost of buildings, and the expenses of transportation to market, of nearly \$1,000,000. If we suppose the quantity of ore consumed daily to be ten tons, (a small estimate) only five years will be required to work up the ore contained in the space mentioned."

"CANADIAN RAILROAD.

"We are happy to learn by a correspondence in the "Chatham Gleaner," that the subject of constructing a railroad from Windsor, opposite this city, to the Niagara river, is again being agitated in the province. There can be no doubt that this work—making a connecting link between our Central railroad and the New York and Massachusetts roads, and thus forming an almost unbroken chain from Boston to Chicago—would yield a profitable and increasing revenue.

"It appears that two charters have been obtained for a railroad from Niagara river to a point nearly opposite Detroit. One is to keep the lake shore, through Talbot street, Long Point and Fort Erie; while the other will pass through the chief towns,

viz: Chatham and London on the Thames, Woodstock, Oxford, Brantford, Hamilton and St. Catharines to Queenston."—[Detroit Journal.]

Here we have two charters, where one road is almost too much to be expected, even with perfect harmony and unity of action in the leading men of that entire section of the province.

The following acts were passed during the late session of the Canadian legislature:

An act to incorporate the St. Lawrence and Atlantic railroad company.

An act to revive certain provisions of the act incorporating the Great Western railway company, and to enable them to carry on that work.

An act to amend an act passed in the sixth year of the reign of his late majesty king William the fourth, entitled, An act to incorporate the city of Toronto and lake Huron railroad company.

We are under obligation to J. E. Bloomfield, Esq., for Mr. Morrison's report on "a reduction of fare and the appointment of a railroad commissioner."

The report takes decided ground against both, and from many of the remarks we are glad to perceive that our legislators are becoming better acquainted with the subject of public works, properly so called, and begin to comprehend the vast difference between works to facilitate the intercommunication of our citizens and works to extort money in the shape of taxes, or by other equally disagreeable means—as the state monopoly of western freight.

We are obliged to defer our remarks on the Central railroad, but will endeavor to give them and the report of the president in the next number. In this number we give the report of the engineer nearly entire.

We tender our thanks to the Hon. John A. Dix, of the U. S. senate, for valuable congressional documents.

The bill releasing the Erie railroad company from the State lien of three millions, on certain conditions, has just passed.

The legislature of Pennsylvania has refused to admit the Erie railroad within the borders of that State.

The mayor of Baltimore has signed the amended bill to forward the iron and coal trade of that city.

The price of iron in England is still advancing; sales of Welsh pig at £7 10s. Scotch, £6.

Freights from Cleveland to New York, via Buffalo, 70 cts. per bbl; via Oswego, 2 cts. less.

We understand that on Thursday last, the Eastern railroad company unanimously accepted the charter recently granted for a branch railroad to Gloucester, Mass., and will proceed to construct it as soon as practicable.

The Fitchburg railroad company have purchased the property owned and occupied by the hon. Benjamin Thompson, in Charlestown, near the depot, for \$24,000. The same property, we understand, was offered some time since to the Charlestown branch railroad company, for \$8,000.

It is said that the subscriptions to the stock of the Providence and Worcester railroad company have advanced so far as to leave but little doubt that the project will succeed. More than \$400,000 have been subscribed; and at a meeting in Uxbridge, on Friday, which was addressed by hon. Linus Child, committees were appointed to obtain further subscriptions.

RATES OF FREIGHT.

The forwarders on the Erie canal have opened the campaign with lower rates of freight than ever before known. They advertise to carry flour from Buffalo to Albany for 55 cents per barrel; and as 35 cents of this amount goes to the State for toll, they receive only 22 cents for carrying a barrel of flour 363 miles. At the rate of the Western railroad they would receive only 45 cts., including tolls. On the Hudson, also, the rates are reduced 20 per cent. Last year they carried flour for 10 cents per barrel; now they charge only 8 cents. There was a combination among the forwarders in '44, to keep up the price; now they combine to reduce it. The charge, during the past season, was $87\frac{1}{2}$ cents per barrel of flour from Buffalo to New York; now it is 63 cents, ($55 + 8$) or $24\frac{1}{2}$ cents per barrel less. The profits of the past season must have been great, or they are now engaged in a ruinous business. At these rates there will be little inducement to use the Welland canal, and discriminating tolls will be as unnecessary as they appear to be, and, we hope, are likely to continue, impracticable. Had the enlargement not been commenced, the tolls might have been reduced to 20 cents per barrel of flour; when the total charge would have been 42 cents—little more than the rates from Kingston to Montreal. Still we do not believe even this advantage would have diminished the trade via the St. Lawrence. The flour which goes that way *must* take that route, or remain in the west; it is not, as we have often explained, *diverted* from the Erie canal, but it is so much additional purchased from the western farmer, who would gladly furnish them ten times as much, without in any way diminishing the quantity sent to the New York market, or even increasing the price.

Many will imagine that the Western railroad carries at less than cost, but it must be remembered that they charge the same for flour delivered on the line, that they have large quantities of return freight, and that, as a certain number of freight trains must be run per day, they may as well be filled, even at a low charge. There are also a variety of local inducements, which have their influence, and very properly too. Lastly a railway doing a large business in passengers and light freight can afford to carry coarse articles in large quantities at very low rates, and this is in fact the secret of the success of our northern roads. They accommodate themselves to the wants and wishes of the community, both as to travelling and the transportation of freight: on the same road

a passenger train may run 25 miles per hour, and a freight train 6 miles per hour. Neither a canal nor a common road can do one or the other, and north of Pennsylvania, the former mode of communication is liable to the insuperable disadvantage of being closed nearly half the year, including that most important period before winter shuts up the rivers and lakes, when the products of the husbandman's toil are ready for market.

We perceive that coal freights from Philadelphia are one dollar per ton to this city, and \$1 45 to Albany, and that there is a great want of vessels to load with coal at Baltimore. In our last and previous numbers we have given statements of the charges on many of the principal lines of the country, and at this season of the year, there are few more important topics.

We find the following in the *Burlington Free Press*, the only paper—American or Canadian—in which we have seen any notice of the extension of the St. John's railroad.

"We took occasion, yesterday, to call the attention of our readers to this subject—and the more we reflect upon it the more thoroughly do the magnitude and importance of the work become impressed upon our minds. The great engrossing topic of this community, at the present time, should be the completion of this road. Every man who regards the welfare and prosperity of New England—and especially of the capital of New England—should engage himself in this work. The railroad from Boston to Montreal must be built; and the sooner it is commenced, the better it will be for the people of Boston.

"On the subject of the construction of this road, we publish the following extract of a letter from a highly respectable gentleman, of Burlington, Vt., who is probably better acquainted with the business of Canada east than any other man in New England.

"The project of connecting Montreal by railroad, with the seaboard, either at Portland or Boston, via Stanstead, appears to me one of those wild schemes which sometimes gain favor for the moment, but which when examined, suddenly vanish into thin air. I have never felt a moment's hesitation on this subject. I have had considerable acquaintance with Canada, residing at Montreal from 1834 to 1841, and my business led me frequently into the country. I do not believe that all the business on the road, during the winter months, would keep the track clear of ice and snow, and, during the remainder of the season, that part of the old road leading through the French settlements, though densely populated and over a good soil, would receive little or no patronage from the inhabitants along the line. The Canadian French patronize nothing but a

cart and poney. The friends of that road cannot now expect to build it with English funds; for the provincial parliament, in granting the charter, omitted to guarantee any dividends on its stock, and this has been considered an essential feature in commending the project to capitalists. Canadians, off the route, will be very slow in taking its stock. Their subscriptions when made, will be for the extension of the St. John's road to the province line, to connect with our road to Boston.

"The route from Burlington to Canada presents no obstacles, more difficult to overcome, than the same distance east or south. The statement, of late so industriously circulated to the contrary, was the offspring of ignorance or malice, and gains no credit with even the Canadians who favored the Stanstead route. I presume measures will be taken, north of us, to cause a survey during the approaching summer.

"The bill chartering a railroad from Ogdensburgh to lake Champlain has passed the N. York house of assembly, and a favorable report has been made upon it to the senate. This will soon become a law; and, when that road is completed, together with ours—making a continuous line from lake Ontario to Boston—imagine, if you can, the enormous extent of its business. The contemplation of such an event fills one with astonishment and wonder. A great revolution is at hand, and prompts us to take an active, zealous and energetic part in hastening its glories to a consummation."

RAILROAD MEETING.

A meeting of many of the citizens of this town was held at the town hall on Tuesday evening of last week, to take into consideration the construction of a railroad from Worcester to Nashua. A delegation of 50 or 60 gentlemen was also present from Norwich, Ct., who came up in an extra train, and returned home after the close of the meeting.

Gov. Lincoln was called to the chair, and John Milton Earle, Esq., was appointed secretary. On taking the chair, Mr. Lincoln made a few brief but pertinent remarks on the importance of the contemplated road to the prosperity of the town of Worcester, and also to the section of country through which it will pass, if built.

Gov. Davis then presented the whole subject to the consideration of the meeting, in a speech at once forcible in manner, and replete with facts and arguments, showing the necessity for the road, its tendency to increase and facilitate the business of this town, its importance to the northern section of Worcester and Middlesex counties and the important towns in the valley of the Merrimac, and the reasonable certainty that the road can be built at a low rate of expenditure, and will be profitable to the stockholders.

The meeting was further addressed by the Hon. John A. Rockwell, of Norwich, Col. A. H. Bullock, and Judge Merrick, of Worcester. At the conclusion of his re-

marks, Judge Merrick introduced a series of resolutions in favor of the road, which were adopted by the meeting and ordered to be published. It was near ten o'clock when the meeting was dissolved.—*Wor. Pal.*

THE EXTENSION OF OUR RAILROAD TO THE OHIO.

There has been no instance, we believe, in the progress of the internal improvements of the country in which so many difficulties were thrown in the way of a great work, as have been made to obstruct the path of the Baltimore and Ohio Railroad Company. Virginia and Pennsylvania have contributed their opposition; and as though this were not enough to embarrass a work which must go through the territory of one or the other of these States, or of both, the Commonwealth of Maryland has joined in the business of delaying and retarding the enterprise.

Through all these difficulties, however, the work is destined to advance. Under circumstances less promising than those which now surround the company, the activity and sagacious management of the able President of the Board accomplished the construction of the line from Harper's Ferry to Cumberland.

The chief obstacle which now prevents the continuance of the road, is the unwillingness of Virginia to grant a right of way through her territory upon terms at all practicable, without great sacrifice. This refusal, however, is so unjust and unjust to a large portion of her own citizens, that it can hardly be persisted in. We publish in this morning's paper, the proceedings of a meeting at Parkersburg on this subject. The whole of Northern and North-Western Virginia is outraged at the course of the Legislature in driving from them so important a work, which would form their avenue to market, and afford the means of communication East and West.

In the Legislature of Pennsylvania, where a similar application for the privilege of way is pending, there are many interests at work to defeat it. The Philadelphia papers are calling for a continuous railroad from Pittsburgh to Philadelphia; they do not like the idea that Pittsburgh and Baltimore are to be connected in that way. The Philadelphia North American, after expressing the hope that the Baltimore and Ohio road will not be allowed to go into the territory of the State, says:—

"It is now conceded on all sides, that it is indispensable that Pennsylvania should construct a continuous railroad from our city to Pittsburgh; it must be done ultimately, though we are not prepared to say that the present is the proper time. We must follow the example of New York, and have one great thoroughfare—a back-bone for our travel continuous and direct. If the State does not feel enabled to incur the responsibility, let individual corporations be allowed to parcel it out, as has been previously done from Lancaster to Harrisburg, and from Columbia to Carlisle."

The affinities of Pittsburgh are with Baltimore; and the probability is, that our road eventually will strike the Ohio, both in Virginia and in Pennsylvania. The opposition in both States is at variance with the interests of large portions of their people respectively.—*Baltimore American.*

THE ATMOSPHERIC SYSTEM.

The interest in the issue of this discovery is gaining ground daily, and we anticipate that before long its merits will be satisfactorily tested and decided. The mention made of it by the board of trade in two separate notifications, has attracted the attention of the public and parliament. The first allusion was in the report on the Newcastle and Berwick railways, when the board stated—"It was impossible not to feel the highest interest in the progress of an experiment, where success has hitherto been sufficient to induce eminent authorities to entertain strong hopes that the result may be an acceleration of speed in travelling, combined with the general introduction of a system of very frequent trains and low fares." In the same report they said, that in a mechanical point of view, the experiment at Dalkey might be considered as "conclusive of the success of the atmospheric system," and that it demonstrated "that trains may be propelled by means of it at high velocities, with safety and convenience to the public;" and that "the same result may be obtained when the separate consecutive portions of line are multiplied indefinitely." But then, they added, that "in a practical and commercial point of view," viz: that of expense, "they cannot yet assume, in forming a judgment upon competing schemes, the success of the atmospheric system, and they, therefore, come to the conclusion, that they must compare competing lines apart from all considerations as to the atmospheric system." The patentees, feeling aggrieved at this qualified approbation, and foreseeing that faint praise might prove as injurious as more decided hostility, petitioned parliament for the appointment of a select committee to enquire into the merits of the system. The discussion that was elicited by this application must have been important and highly gratifying to the inventors. Lord Howick stated that he believed the atmospheric system as superior to the existing railroad, as those railroads were to the old turnpike roads. This language is strong; but scarcely more so than the subsequent avowal of the Premier—"Let it be understood (said Sir R. Peel) that my impressions are strongly in favor of the atmospheric system." This coming from such an influential source will not be without its effect; and should the experiments now in anticipation succeed, the principle, supported as it will be by government, will remain no longer in abeyance. Those practical experiments, too, are first progressing to completion. The works on the Croydon and Epsom line are in a considerable state of advance, and it is anticipated that operations will be commenced on the 1st of May. It is intended in the first in-

stance, to open only five miles of the railway, commencing at the Dartmouth Arms, and terminating at Croydon; although the whole length of the line, when completed, will be eighteen miles and a half. The chief reason for opening this section of the line is, so that the government and the public may have as early an opportunity as possible of judging the efficiency of the system. At other sections of the line, the greater portion of the works is completed, including the preparations for the electric telegraph. The results of this trial are looked forward to with intense anxiety, not only as effecting the feasibility of the system, but the resumption of many operations suspended in the interim. It was only on Saturday last that the board of trade, in the course of an elaborate report on the construction of various lines, in connection with the metropolis, recommended the postponement, till the experiment of the atmospheric railway from London to Epsom shall have been put in execution, of the Epsom and Dorking—London and Croydon (Dorking branch)—London and Brighton (Dorking branch)—and South Eastern (Reigate and Dorking branch)—adding, "if the atmospheric system of propulsion should prove successful and deserving of further adoption, it would seem to be better suited than the locomotive system of traction to the nature of this section of country. The whole question of railway communication with Dorking may be temporarily postponed without any inconvenience, and if hereafter the atmospheric system should prove available, the line from Epsom to Dorking, projected upon that principle, would appear to be the best adapted for supplying the wants of Dorking and its vicinity, without incurring the expense of making so many additional miles of railway." The issue, therefore, of the approaching trial, coupled with the report of the select committee, which was granted by the house of commons, will be decisive at the same time of great private claims, vast corporate interests, and national considerations of no insignificant importance.—*Mining Journal.*

ON IRON SHIPS.

In a late number of the Mining Journal (page 80) we referred to the preference given in Liverpool to iron vessels, and the great likelihood of their more general adoption prior to the end of the present year; since then, we are informed that at Walker, near Newcastle-upon-Tyne, Mr. Coutts has now in hand fifteen iron sailing vessels; that is certainly a wholesale way of introducing this material for ship building, and is strong presumptive evidence of the justness of our anticipations; our only surprise is, that iron ships have so long remained in almost *statu quo* since their first introduction—possessing as they do so many incontrovertible advantages over wood. We may briefly state a few of them.

1. There being no limits to the size of iron vessels, as there is to wooden ones, on account of the want of sufficient size of timber to construct the latter.

2. They draw and displace less water, on account of the difference of weight—iron ships being, on an average, only about 7-16, or less than half the weight of wooden ones.

3. They have much more stability than wooden vessels of the same model, on account of the cargo, or ballast, getting much nearer the water, or further below the centre of gravity and motion, in iron vessels; the difference of thickness of the materials between the water and cargo being, in iron vessels, about one-tenth the dimensions necessary for wooden ones.

4. They sail much faster, as it is well ascertained that flexible and slight wooden vessels sail fastest, and vice versa regarding strong and stiff ones. Now, iron ships have the properties of being more flexible than slight wooden ships, and stronger than stiff ones.

5. They are safer than wooden vessels, as they are fire-proof, and, when properly constructed, with water tight bulkheads and air tight decks, are perfect life boats.

6. They can be more easily repaired, as the only damage they can receive must be local, and, from the manner of their construction, the injury can always be seen, and of course remedied.

7. They will last for a much longer period, if we may judge from examples now afloat, that have been for years in the water in all climates, and not the least decay being visible.

8. They carry a much larger cargo, according to their tonnage, than wooden vessels, as the difference of the timbers and the two skins of a wooden vessel, on the sides and bottom, is rendered available for cargo; hence the saving in original cost, by having, say a nominal 300 tons ship, to carry 500, which is about the difference between iron and wooden vessels, of the same builders dimensions; and a great saving is likewise effected as regards expense of working the vessel, harbor dues and lights.

9. Iron vessels have the property of decreasing in price per ton as they increase in dimensions, whereas wooden ships increase in exactly the opposite ratio. A twelve-years A 1 ship, of 200 tons, builders' measurement, would be about the same expense as an iron vessel of like dimensions, only the iron vessel would carry one-third more cargo at the same draught of water; but an iron vessel, of 1000 tons o. m., would only cost one-half the price of a like wooden one, besides the additional stowage, and easy draught of water.

10. They are, when properly constructed, much stronger, and can be grounded, or beached, in any quarter, with perfect safety.

11. Insurance can be effected upon either ship or cargo at as low a figure (if not in many cases lower) than can be done upon a first class wooden vessel under like circumstances.

12. They require no coppering or protection from the worm or dry rot—those two dangerous diseases incidental to wooden vessels; and, by attention, the bottoms of iron ships can be kept perfectly clean.

From these qualities becoming daily better known, the unfounded prejudice against iron vessels must soon fall to the ground, and even when the present unprecedented stimulus in the iron market, from railway speculations, shall have ceased, the ironmaster may then look forward to a very fertile demand for his manufacture from the marine of the country.

In wooden built vessels the principal cost lies in the material alone—the labor being but a small part of the expense; but in iron built vessels the labor constitutes nearly the whole of the outlay, for from the first mining of the ore and fuel, to the finishing of the last rivet in the fabric, it is but a succession of manual labor, which is represented by the payment of wages, through its many and varied phases.—*Mining Journal*.

FRENCH RAILWAYS.

A vast amount of speculation is going on in French projects. The public snatch at anything having the name of French attached to it with ravenous eagerness. We are not at all surprised at this. The guarantee system is of itself a sufficient cause. The fact that the deposit money is guaranteed to be returned in full, tempts the public to sign for shares in an undertaking, in which, in case of failure, no deduction whatever is made for expenses. Nor do we think that herein the public taste is misdirected. For if there be a respectable Committee to deal with, it is a great safeguard for the public, to be certain that they will not suffer by the misfortune of misconduct of the promoters. The guarantee is further, a most efficient means of ensuring the best exertions of the promoters to obtain success, as well as to exercise due economy; as in the event of failure, they are aware that they, and not the shareholders will be the sufferers for want of management, or extravagance. This arrangement, to our minds, is much more equitable and salutary than the system in England. For here, the greater the extravagance, usually, the better for the pockets of the promoters, who are held free from participation in their own mismanagement or extravagance; the shareholders are left to pay the piper. Now, is it not by far more just that those who incur and have the control of expense should be responsible for it? In general, there is not a more extravagant set of fellows on earth than projectors. What can be more wholesome than to place some kind of restraint upon them? It is a benefit to themselves. We have no doubt that if the same guarantee system had been adopted here in a case or two that occurred last session, wherein enormous sums were spent in "preliminary expenses" for abortive schemes, which the shareholders had to pay, and had not the power to say a word against it, that many thousands of pounds would have been saved.

We confess, for these reasons, we rather prefer the French guarantee system to the unlimited one adopted in England. Of course, the value of a guarantee depends upon the respectability of the committee, or body of promoters. Of the numerous

Companies set on foot for French lines, we believe the generality of them are sufficiently respectable to be to be enabled to meet the guarantee, in case of need. Some of the Companies are composed of men of the highest respectability both in England and France; true, there may be a few "black sheep." Amongst others, we notice that there are no less than four companies for the line from Paris to Lyons. No doubt the prize is well worth the competition. Of these four, Laffitte's and Gauneron's stand first in respectability and influence; the other two, the Great Paris and Lyons, and and Calon's, are not in such estimation. It is well known that in France, as was in a measure the case in England, when railways first appeared, everything goes by interest and influence.

Another reason that leads us to approve of the public judgment in embarking in French railways is, that there nearly all the schemes are for important main trunk lines, equivalent to our Birmingham, Great Western, Grand Junction, etc.—*Herapath*.

CENTRAL RAILROAD.—ENGINEER'S REPORT.

The period of another annual convention of the stockholders of this company being at hand, I submit to you the following report of the operations of the road for the last year, and its condition at this time.

The fiscal year of the company terminates with the month of November, but it was deemed proper to delay the report to the present time, that a supplementary statement may be appended, showing the operations of the company, as nearly up to the period of the convention of the stockholders as possible.

Total number of bales of cotton transported during the year, 77,437.

The expenses of working the road for the above period have been as follows:

Maintenance of way—including all repairs and materials for repairs of road, depots, turn outs, wells, cisterns, bridges, etc.,	\$66,273 04
Maintenance of motive power and cars—including all materials used in repairs of engines and cars, all labor for the same, wages of engine-men, firemen, oil, tallow, fuel, water, etc.,	35,344 43
Transportation expenses—including depot expenses, wages of conductors and train hands salaries of agents and clerks, insurance on cotton, damage, etc.,	44,554 44
Incidental expenses—printing and stationery,	1,557 61
Total,	\$147,719 52

RECAPITULATION.

Earnings of the road for the year ending Nov. 30, 1844,	\$328,424 01
Expenses for the same period,	147,719 52
Profits,	\$180,704 49

The earnings for the four months ending April 1st, 1845, have been \$142,337 92.

The distance run by the trains during the year, is as follows:

Passenger trains, -	119,556 miles.
Freight " -	91,298 "

Total, -	210,854 "
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In performing this distance, 3,605 cords of wood have been consumed, which is one cord for every 50 miles run.

The amount of tonnage transported during the year is equal to 1,056,128 tons hauled one mile.

It must be borne in mind, that for a considerable part of the year, the trains go very light in one direction. In the fall, when the up-freight greatly exceeds the downward, and before the cotton crop begins to come to market, the down-trains run nearly empty. The reverse is the case a few months later, when the up-freight falls off, and cotton presses forward; and there is a short period in the summer that there is very little freight in either direction. It is presumed that this irregularity will gradually cease, and that the freighting business will, after a time, be more equally distributed throughout the year. Other articles of transportation, such as lumber, staves, fuel, etc., will seek this channel, and afford freight for the down trains in the summer and fall, when other freight is dull.

The cost of working the road and maintaining it during the last year, including all expenses, has been as follows:

	Cents.
For maintenance of way per mile run, 31.4	
For maintenance of mo. power and cars, 16.7	
For transportation expenses, - 21.1	
For contingencies, - 0.8	
Total, -	70.0

The depot grounds at either end of the road, were considered amply sufficient for any business that might offer, but the experience of the past year has shown that they must be extended—particularly the cotton yards. It is in contemplation to make additions to them during the present year, and a purchase of ground for this purpose has already been made. The want of a suitable passenger house at the Savannah depot has long been felt; a plan has been prepared and it is proposed to erect the building during the approaching summer.

A small engine house is also required at the centre of the road, at which a spare passenger and freight engine may be kept to supply the place of any engine that may be disabled on the road.

Our motive power now consists of 16 engines, all in working order, except the "Georgia," which we are re-modelling. She will be fitted up as a freight engine, with 8 wheels.

An order has been given for four more; our number will then be twenty. Eleven for freight and nine for passengers.

We now have one hundred and fifty, eight wheel freight cars, and intend increasing the number to two hundred for the next season's business.

We have all of our wheels cast at a foundry in this city, and fit them up in our own shops; by this course we get a more perfect article, and at no greater cost than to order from the north. We have not had an instance of the failure of the wheels and axles fitted up by our own workmen.

The condition of the road is much improved since my last report, and is as good now as at any former period.

The good policy of keeping an efficient force on the repairs, is more and more manifest, in the regularity with which the trains perform their trips.

We have now had sufficient experience to enable us to make a fair estimate of the annual cost of keeping up the road. I find the average duration of pine string pieces is six years; of pine cross ties, eight years; and of ribbon, four years.

There is in the whole road about 130,000 cross ties: 12,300,000 feet (board measure) of string pieces, and 600,000 feet (board measure) of ribbon. We now renew the cross ties with cypress, which, I think, will last at least ten years.

Then $\frac{1}{4}$, or 16,250 cross ties per annum, at 25 cents, -	\$4,062 50
$\frac{1}{4}$, or 2,050,000 feet (b.m.) string pieces, at \$6 per M, -	12,300 00
$\frac{1}{4}$, or 150,000 feet (b.m.) ribbon, at \$12 per M, -	1,800 00
Repairs of trestle work and bridges, -	8,000 00
Spikes, -	2,000 00
Deterioration of iron -	22,500 00
Repairs of wells, pumps, cisterns, turnouts, depots, turn tables, and contingencies, say -	7,987 50
Thirty gangs of laborers, of six each gang, including overseers and supervisors, at \$110 per gang per month -	39,600 00
Salaries of superintendent and assistant, -	1,750 00
Total, -	\$100,000 00

An average of about \$526 per mile per annum. The expense during the past year has been \$348—about two-thirds of the above sum. As the cross ties and string pieces of the western part of the road, are as yet not much decayed, and most of the bridges are sound, it will be some years before the cost of repairs will reach the maximum; but I am confident that with the amount of business that may reasonably be expected, the cost of maintaining the road will not fall much short of one hundred thousand dollars per annum.

It is not so easy to make an estimate of the other annual expenses attending the operations of the road, as the maintenance of the machinery and the transportation expenses, are governed in a great degree, by the amount of business done. I am confident, however, that with a business that would yield an income of \$450,000 per annum, the whole expense of operating the road would not exceed \$200,000; and I am equally confident the receipts of the road will at no distant period, exceed that amount.

The opinions of engineers on the subject of the duration of railroad iron, are extremely variant, and the system has not been in operation a sufficient time in this country, to afford data for an exact estimate.

There are about 8,000 tons of iron on our road, which has been laid down an average of five years. On the eastern part of the road, near this city, several miles have been in use eight years; and during the first year and a half of the time, bore the transit of twelve trains per day in each direction, transporting material for the heavy embankment adjoining the city, and I cannot perceive any difference in the condition of this, and other portions of the iron, which have not borne half the amount of tonnage.

I have set down the annual deterioration at five per cent., and I am satisfied that will be found sufficient. The cost, thus far, has not been one-tenth of that sum.

I intimated in my last report the intention of substituting embankments for a considerable portion of the trestle bridging on the line. We have commenced this operation at the long trestle work near the 100 mile station, and it will be continued on a moderate scale during the year.

I am, very respectfully, your ob't serv't.

L. O. REYNOLDS, Chief Engineer.

Railroad Meeting.—A meeting of the citizens of Sullivan county, New-Hampshire, and of Windham and Windsor in Vermont, friendly to the extension of the Cheshire Railroad, from Bellows Falls up the valley of the Connecticut, as far as Charlestown, and thence to the mouth of White River, if deemed expedient, to be holden at Charlestown, N. H., is called on Saturday next. —*Boston Courier.*

Hampshire and Franklin Railroad.—A meeting of the friends of a railroad on the east side of the Connecticut River, south of Miller's River, met at Amherst on the first inst. It was voted to organize a company under the charter just obtained, and committees were chosen to procure subscriptions to the stock. The following resolution was passed:

Resolved, as the opinion of this convention, That the accommodation and general good of the Connecticut Valley, and of other portions of the Commonwealth, require the construction of the Hampshire and Franklin Railroad, and that, by the united energy and action of the people generally upon the east side of the Connecticut River, the project can and will be successfully accomplished.

The Canal.—From all accounts that we receive we cannot much doubt that the security for the requisite tonnage on the Chesapeake and Ohio Canal will be procured, and the prosecution of the work ensured. To effect this purpose, every exertion is being made, and Col. Coal is now on at the north to make the necessary investigations relative to the disposition of the bonds, &c. When the tonnage is ensured, of course there can be no loss to the State.—*Fred. Herald.*

THE IRON TRADE.

There never was, perhaps, a period, since the manufacture of iron assumed any degree of importance in this country, in which the prospects of long continued prosperity in this great branch of our staple trade, are based on such certain anticipations as at the present moment. The years of high prices, and consequent prosperity were 1817, 1818, 1825 and 1836, in which the prices of pig iron were upon an average 9l. 13s. and 7l. 10s., respectively; but the uses to which iron was put at those periods, do not appear to have borne out a sufficient cause for the great advances in price which were then obtained. Until 1836, railways, for which so many thousands of tons are required, were almost unknown in this or any other country, and the many uses to which it is applied, were either little understood or very sparingly adopted. Thus fire proof buildings, and the general introduction of iron into both public edifices and private houses and mansions, which carry off so large a quantity of our present supply, were little known a few years ago; but the great feature at present is the employment of iron in ship building—that is, constructing both steam and sailing vessels entirely of iron. On a careful examination, the building of iron vessels does not appear likely to be a temporary nature, from the following facts which came under the writer's own observation. Seven years ago, four sailing vessels were built for the company trading from an out port to London. Three of them were built of wood, and one was constructed of iron. At the dissolution of the company last year, these vessels were sold—the three wooden ones bringing one-half of their original cost, while the iron one was found to have suffered so little, and to have cost so small a sum in repairs, that she was sold for very nearly the precise sum of her first cost. These facts, among many others of a similar character, give such a character to iron vessels, and are beginning to be so well understood and appreciated, that there is hardly an iron ship building yard in the kingdom that is not fully employed, and where inquiries for iron vessels are not daily being made, and they justify our opinion, that within a few years there will be no vessels constructed of any other material. Government seems so fully convinced of their superiority over timber frigates, that many are now being constructed of iron in London, Liverpool, Birkenhead, and Glasgow, for public service, and the late increase in the navy estimates, seems to point out still further additions to our war steam vessels. The cotton trade, under ordinary circumstances, takes about one-sixth of the iron made in this country annually in machinery, arising from the ordinary wear and tear of steam engines, boilers, new mills, and the substitution of new and improved looms, etc., for the old. But the number of new mills at present in course of erection exceeds any former period; and of course, must increase the average quantity of iron to be consumed in this branch of our trade. Agriculture

also requires considerable supplies, which must this year, and for many succeeding ones, be greatly increased, from the improvements that are taking place in agricultural machinery. If to these circumstances be added the extra demands for an increasing population, not only in point of numbers, but in wealth and general prosperity, it must be admitted, that a greater amount of iron will be required, both in this and other countries, than has ever yet been known.

It has been urged, that high prices of any article will soon have the effect of increasing the production of that commodity. This in most cases is true; but it will not fully, and at all events, will not immediately apply to iron, for the erection of new furnaces and machinery, the sinking of new coal mines, and the forming of railways to bring the minerals to the point at which they are required, involve so large a quantity of iron, as to render it even scarcer for the time. Another cause which tends to diminish the production of iron while high prices prevail, is the advance of wages to workmen always incident to prosperous times, for a miner will work six days a week when he earns only 2s. a day; but only three or four days when he gets 4s. or 5s. a day. The great demand for labor in the forming of the new lines of railway, in tunnelling and embanking, will also draw from the iron districts a large amount of population, which would otherwise have been employed in the kindred branch of mining.

It may be a matter of some interest in the present state of the iron trade, to attempt to reduce to figures the amount of iron likely to be made and consumed in the present year; and with some labor, assisted by practical men, the following table has been drawn up:

Pig iron produced in England and Wales in 1844,	856,000
Iron produced in Scotland in 1844,	354,000
Total tons for Gt. Britain, 1844,	1,210,000
<i>Estimated consumption for 1845.</i>	
2000 miles of railways to be made in 1845 and 1846—say half in 1845 contracted for—	
1000 miles of railway, 250 tons per mile for rails,	250,000
Add for loss of one-fifth, in converting pig iron to rails,	50,000
1000 miles of railway require for chairs,	70,000
Add loss in manufacture, 5 pr ct.,	3,500
Iron required for railways in progress, and passed in 1844,	150,000
Iron for wagons, stations, engines, tanks, etc., computed from inspection of railway companies accounts, that each mile of railway requires 300 tons per mile above the weight of permanent rails and chairs—1000 miles will then give,	300,000
Export in 1844, 460,000 tons—say, from the increase of railways abroad, and the remission	

of duties on iron by some of the continental states, it will be 500,000
General consumption of iron in Great Britain (exclusive of railways,) in bar iron, castings, water and gas pipes, in steam-engines, and the whole hardware of the country, - 480,000

Total tons, - 1,803,500

If this statement, in any way, is near the truth, we shall have a deficiency of nearly 500,000 tons of iron, which must cause the suspension of many great public works. It is possible that from the exertions of our iron masters, a greater quantity may be produced than 1,330,000 tons, but it cannot be materially greater than what has been computed. Under any circumstances however, it cannot be denied that the iron trade is more prosperous, and that its present flourishing state is not only certain of being permanent for some years, but more likely to increase than at any former period.—*Mining Journal.*

The rail chairs for the Newcastle and Berwick Railway, amounting to 27,000 tons, have been contracted for at 12l. per ton the former and 7l. the latter.

RAILROAD IRON AND FIXTURES. THE Subscribers are ready to execute orders for the above, or to contract therefor, at a fixed price, delivered in the United States.

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21 Broad st., N. York.

ja45

NICOLL'S PATENT SAFETY SWITCH for Railroad Turnouts. This invention, for some time in successful operation on one of the principal railroads in the country, effectually prevents engines and their trains from running off the track at a switch, left wrong by accident or design.

It acts independently of the main track rails, being laid down, or removed, without cutting or displacing them.

It is never touched by passing trains, except when in use, preventing their running off the track. It is simple in its construction and operation, requiring only two Castings and two Rails; the latter, even if much worn or used, not objectionable.

Working Models of the Safety Switch may be seen at Messrs. Davenport and Bridges, Cambridgeport, Mass., and at the office of the Railroad Journal, New York.

Plans, Specifications, and all information obtained on application to the Subscriber, Inventor, and Patentee.

G. A. NICOLLS,
Reading, Pa.

ja45

GEORGE VAIL & CO., SPEEDWELL IRON Works, Morristown, Morris Co., N. J.—Manufacturers of Railroad Machinery; Wrought Iron Tires, made from the best iron, either hammered or rolled, from 1½ in. to 2½ in. thick.—bored and turned outside if required. Railroad Companies wishing to order, will please give the exact inside diameter, or circumference, to which they wish the Tires made, and they may rely upon being served according to order, and also punctually, as a large quantity of the straight bar is kept constantly on hand.—Crank Axles, made from the best refined iron; Straight Axles, for Outside Connection Engines; Wro't. Iron Engine and Truck Frames; Railroad Jack Screws; Railroad Pumping and Sawing Machines, to be driven by the Locomotive; Stationary Steam Engines; Wro't. Iron work for Steamboats, and Shafting of any size; Grist Mill, Saw Mill and Paper Mill Machinery; Mill Gearing and Mill Wright work of all kinds; Steam Saw Mills of simple and economical construction, and very effective Iron and Brass Castings of all descriptions.

ja451y

NEW JERSEY RAILROAD AND TRANSPORTATION COMPANY.

Length of Road, 33 96-100 miles.

Capital, \$2,000,000.

JOHN S. DARCY, Esq., President.

ROBERT SCHUYLER, Esq., Vice President.

J. P. JACKSON, Esq., Secretary.

J. WORTHINGTON, Esq., Treasurer.

Leave New York, foot of Courtland street.	DAILY.				SUNDAY.	
	A. M.		P. M.		A. M.	P. M.
For Newark.....	9, 11, 12.....		2, 3, 4 3-4, 6, 7 1-2		9.....	4 3-4
" Elizabethtown.....	9, 11.....		2, 3, 4 3-4, 6.....			
" Rahway.....	9, 11.....		3, 4 3-4, 6.....			
" New Brunswick.....	9.....		3, 4 3-4.....			
Leave						
New Brunswick.....	6, 7 1-2, 11 1-2.....		8 3-4.....		11 1-2	8 1-2
Rahway.....	6 3-4, 7, 8 1-4, 12.....		4 3-4, 9 1-4.....			
Elizabethtown.....	7, 7 1-2, 8 1-2, 10 1-2, 12		3 1-2, 5.....			
Newark.....	7 1-2, 8 1-4, 9, 11.....		11 1-2, 4, 5 1-2, 7, 9 3-4		11 3-4	9 3-4

For New York.
9 A. M. and 3 P. M. to meet the Morris and Essex trains, and 9 A. M. and 4 3-4 P. M. to meet the Somerville train, and for Philadelphia.

TABLE OF DISTANCES AND FARES.

	New York.		Newark.		Elizabethtown.		Rahway.		N. Brunswick	
	Miles.	Cents.	Miles.	Cents.	Miles.	Cents.	Miles.	Cents.	Miles.	Cents.
New York.....			9 1-4	25	14 1-2	31 1-4	19 3-4	31 1-4	31 1-2	50
Newark.....	9 1-4	25			5 1-2	12 1-2	10 1-2	25	22 1-2	50
Elizabethtown.....	14 1-2	31 1-4	5 1-2	12 1-2			5	12 1-2	16 3-4	50
Rahway.....	19 3-4	31 1-4	10 1-2	25	5	12 1-2			11 3-4	37 1-2
New Brunswick.....	31 1-2	50	22 1-2	50	16 3-4	50	11 3-4	37 1-2		

KITE'S PATENT SAFETY BEAM.

MESSRS. EDITORS.—As your Journal is devoted to the benefit of the public in general I feel desirous to communicate to you for publication the following circumstance of no inconsiderable importance, which occurred some few days since on the Philadelphia, Wilmington and Baltimore railroad.

On the passage of the evening train of cars from Philadelphia to this city, an axle of our large 8 wheeled passenger car was broken, but from the particular plan of the construction, the accident was entirely unknown to any of the passengers, or, in fact, to the conductor himself, until the train, (as was supposed from some circumstances attending the case,) had passed several miles in advance of the place where the accident occurred, whereas had the car been constructed on the common plan the same kind of accident would unavoidably have much injured it, perhaps thrown the whole train off the track, and seriously injured, if not killed many of the passengers.

Wilmington, Del., Sept. 28, 1840.

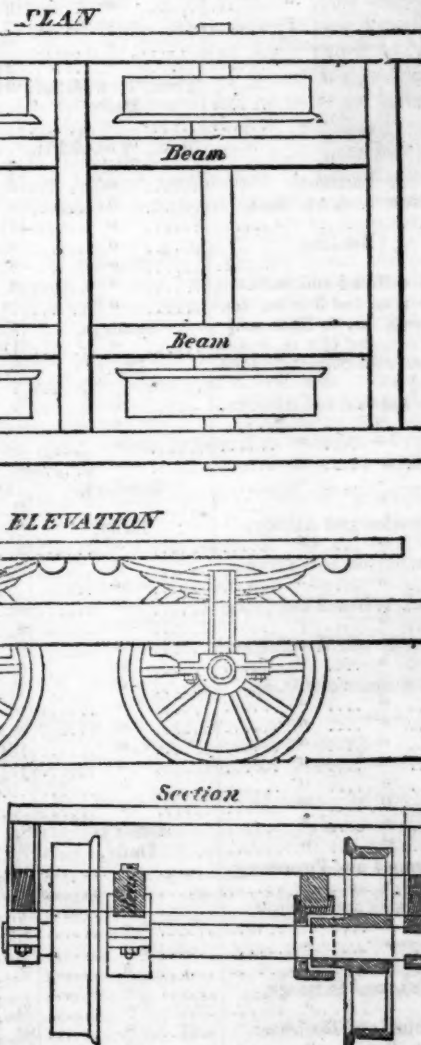
The undersigned takes pleasure in attesting the value of Mr. Joseph S. Kite's invention of the Safety Beam Axle and Hub for railroad cars. They have for some time been applied to passenger cars on this road, and experience has tested that they fully accomplish the object intended. Several instances of the fracture of axles have occurred, and in such the cars have uniformly run the whole distance with entire safety. Had not this invention been used, serious accidents must have occurred.

In short, we consider Mr. Kite's invention as completely successful in securing the safety of property and lives in railroad travelling, and should be used on all railroads in the country.

JOHN FRAZER, Agent,

GEORGE CRAIG, Superintendent,

A model of the above improvement is to be seen at the New Jersey railroad and transportation office, No. 1 Hanover st., N. York.



W. R. CASEY, CIVIL ENGINEER, NO. 23 Chambers street, New York, will make surveys, estimates of cost and reports for railways, canals, roads, docks, wharves, dams and bridges of every description, with plans and specifications. He will also act as agent for the sale or purchase of machinery, and of patent rights for improvements relating to public works.

SAMUEL NOTT, CIVIL ENGINEER, Surveyor and General Agent, Bangor, Me. Railroads, Common Roads, Canal, Factory and Mill Sites Towns, Farms, Wild Land, etc., surveyed. Plans and Estimates for Buildings, Bridges, etc., prepared, and all appertaining business executed.

— REFERENCES. —

Boston, { Col. James F. Baldwin, Civil Engineer.
Col. J. M. Fessenden, "
Wm. Parker, Esq., Engineer and Superintendent
Boston and Worcester railroad. ja45

PATENT HAMMERED RAILROAD, SHIP and Boat Spikes. The Albany Iron and Nail Works have always on hand, of their own manufacture, a large assortment of Railroad, Ship and Boat Spikes, from 2 to 12 inches in length, and of any form of head. From the excellence of the material always used in their manufacture, and their very general use for railroads and other purposes in this country, the manufacturers have no hesitation in warranting them fully equal to the best spikes in market, both as to quality and appearance. All orders addressed to the subscriber at the works, will be promptly executed. JOHN F. WINSLOW, Agent.

Albany Iron and Nail Works, Troy, N. Y.
The above spikes may be had at factory prices, of Erastus Corning & Co., Albany; Hart & Merritt, New York; J. H. Whitney, do.; E. J. Eting, Philadelphia; Wm. E. Coffin & Co., Boston.

MACHINE WORKS OF ROGERS, KETCHUM & GROSVENOR, PATTERSON, N. J. The undersigned receive orders for the following articles, manufactured by them of the most superior description in every particular. Their works being extensive and the number of hands employed being large, they are enabled to execute both large and small orders with promptness and despatch.

Railroad Work.

Locomotive steam engines and tenders; Driving and other locomotive wheels, axles, springs & flange tires; car wheels of cast iron, from a variety of patterns, and chills; car wheels of cast iron with wrought tires; axles of best American refined iron; springs; boxes and bolts for cars.

Cotton, Wool and Flax Machinery of all descriptions and of the most improved patterns, style and workmanship.

Mill gearing and Millwright work generally; hydraulic and other presses; press screws; callenders; lathes and tools of all kinds; iron and brass castings of all descriptions.

ROGERS, KETCHUM & GROSVENOR, a45 Paterson, N. J., or 60 Wall street, N. York.

PATENT RAILROAD, SHIP AND BOAT Spikes. The Troy Iron and Nail Factory keeps constantly for sale a very extensive assortment of Wrought Spikes and Nails, from 3 to 10 inches, manufactured by the subscriber's Patent Machinery, which after five years' successful operation, and now almost universal use in the United States (as well as England, where the subscriber obtained a patent) are found superior to any ever offered in market.

Railroad companies may be supplied with Spikes having countersink heads suitable to holes in iron rails, to any amount and on short notice. Almost all the railroads now in progress in the United States are fastened with Spikes made at the above named factory—for which purpose they are found invaluable, as their adhesion is more than double any common spikes made by the hammer.

All orders directed to the Agent, Troy, N. York, will be punctually attended to.

HENRY BURDEN, Agent.

Spikes are kept for sale, at Factory Prices, by J. & J. Townsend, Albany, and the principal iron merchants in Albany and Troy; J. I. Brower, 222 Water St., New York; A. M. Jones, Philadelphia; T. Janviers, Baltimore; Degrand & Smith, Boston.

.. Railroad Companies would do well to forward their orders as early as practicable, as the subscriber is desirous of extending the manufacturing so as to keep pace with the daily increasing demand. ja45

TRAINS LEAVE	FOR	BY	RAILROAD	DAYS	A. M.	P. M.	MILES.	FARE.
Boston	Portland		Eastern,	Daily,	7 $\frac{1}{2}$	2 $\frac{1}{2}$	106	\$3 00
"	Portsmouth		"	"	7 $\frac{1}{2}$	2 $\frac{1}{2}$, 4 $\frac{1}{2}$	54	2 00
"	Newburyport		"	"	7 $\frac{1}{2}$	2 $\frac{1}{2}$, 4 $\frac{1}{2}$	35	1 25
"	Salem		"	"	7 $\frac{1}{2}$, 9, 11 $\frac{1}{2}$	2 $\frac{1}{2}$, 3 $\frac{1}{2}$, 4 $\frac{1}{2}$, 6	14	50
"	Portland		Boston and Maine,	"	7 $\frac{1}{2}$	2 $\frac{1}{2}$	109	3 00
Portland	Boston		"	"	7 $\frac{1}{2}$	3	109	3 00
Boston	Lowell		Boston and Lowell,	"	7, 11	2, 5	26	75
Lowell	Boston		"	"	7 $\frac{1}{2}$, 11	2, 4 $\frac{1}{2}$, 5 $\frac{1}{2}$	26	75
Boston	Concord		Concord,	"	7 $\frac{1}{2}$	3 $\frac{1}{2}$	76	2 00
Concord	Boston		"	"	7 $\frac{1}{2}$	3 $\frac{1}{2}$	76	2 00
Boston	Nashua		Nashua and Lowell,	"	7, 11	5	41	
Boston	Nashua		"	"	6 $\frac{1}{2}$	1 $\frac{1}{2}$, 5	41	
Boston	Worcester		Boston and Worcester,	"	7, 9	2 $\frac{1}{2}$	44	1 25
Worcester	Boston		"	"	7, 10	6	44	1 25
"	"		"	Sundays,	7			
Boston	Worcester		"	"	2			
Boston	New York via Norwich		"	Mon., Wed. & Fri.,	4			
"	" " L. Island railroad		"	Tues., Thur. & Sat.,	7			
"	" " New Haven		"	Daily,	9	2 $\frac{1}{2}$		
"	Albany		Western,	"	9	2 $\frac{1}{2}$	200	6 00
Albany	Boston		"	"	8 $\frac{1}{2}$	1 $\frac{1}{2}$	200	6 00
Springfield	Boston and Albany		"	"	7	3		
Boston	New York via New Haven		"	"	7	2 $\frac{1}{2}$		
Charlestown	West Acton		Fitchburg,	"	8	1, 4 $\frac{1}{2}$		
West Acton	Charlestown		"	"	7 $\frac{1}{2}$, 10 $\frac{1}{2}$	5		
Boston	New York, via Steamboat trains		Boston and Stonington,	Tues., Thur. & Sat.,	4 $\frac{1}{2}$			
"	" " " "		Boston and Newport,	Mon., Wed. & Fri.,	4 $\frac{1}{2}$			
"	Providence		"	Daily,	7 $\frac{1}{2}$	4	41	1 50
Providence	Boston		"	"	On arrival of the	mail.	41	1 50
Taunton	"		"	"	8	4		
New Bedford	Boston		"	"	7 $\frac{1}{2}$	2 $\frac{1}{2}$		
Boston	Dedham		"	"	8 $\frac{1}{2}$	3, 6 $\frac{1}{2}$		
Dedham	Boston		"	"	7, 10	5 $\frac{1}{2}$		
New York	Greenport		Long Island,	"	7 $\frac{1}{2}$		95	2 25
Brooklyn	Hicksville & intermediate places		"	"	9 $\frac{1}{2}$		26	56 $\frac{1}{2}$
"	Greenport		"	Tues., Thur. & Sat.,	9 $\frac{1}{2}$		95	2 25
"	Hicksville, (Satur'd'y to Suffolk)		"	Daily,		4	26	56 $\frac{1}{2}$
Greenport	Brooklyn, (Boston train)		"	"		1	95	2 25
"	" (accommodation do.)		"	Mon., Wed. & Fri.,			95	2 25
Hicksville	" & intermediate places		"	Daily,	7	11	26	56 $\frac{1}{2}$
New York	Albany & Boston via N. Haven		Steamer,	"	6 $\frac{1}{2}$			5 00
"	Middletown		New York and Erie,	"	8, 3		53	
Middletown	New York		"	"	6 $\frac{1}{2}$	3 $\frac{1}{2}$	53	
Philadelphia	Pottsville		Reading,	"	9		94	3 50
Pottsville	Philadelphia		"	"	9		94	3 50
New York	Newark		N. J. railroad and trans. co.,	"	9, 11, 12	2, 3, 4 $\frac{1}{2}$, 6, 7 $\frac{1}{2}$	94	25
Newark	New York		[9 A. M. and 3 P. M., connect with Morris Railroad.]	"	7 $\frac{1}{2}$, 8 $\frac{1}{2}$, 9, 11	1 $\frac{1}{2}$, 4, 5 $\frac{1}{2}$, 7, 9 $\frac{1}{2}$	94	25
"	"		"	Sundays,	9	4 $\frac{1}{2}$	94	25
New York	Newark		[9 A. M. and 4 $\frac{1}{2}$ P. M., trains connect with Somerville Railroad.]	Daily,	9, 11	2, 3 $\frac{1}{2}$, 4 $\frac{1}{2}$, 6	14 $\frac{1}{2}$	31 $\frac{1}{2}$
Elizabethtown	New York		"	"	7, 7 $\frac{1}{2}$, 8 $\frac{1}{2}$, 10 $\frac{1}{2}$, 12	3 $\frac{1}{2}$, 5	14 $\frac{1}{2}$	31 $\frac{1}{2}$
New York	Rahway		N. J. railroad and trans. co.,	"	9, 11	3, 4 $\frac{1}{2}$, 6	19 $\frac{1}{2}$	31 $\frac{1}{2}$
Rahway	New York		"	"	6 $\frac{1}{2}$, 7, 8 $\frac{1}{2}$, 12	4 $\frac{1}{2}$, 9 $\frac{1}{2}$	19 $\frac{1}{2}$	31 $\frac{1}{2}$
New York	New Brunswick		"	"	9	3, 4 $\frac{1}{2}$	31 $\frac{1}{2}$	50
New Brunswick	New York		"	"	6, 7 $\frac{1}{2}$, 11 $\frac{1}{2}$	8 $\frac{1}{2}$	31 $\frac{1}{2}$	50
"	"		"	Sundays,	11 $\frac{1}{2}$	8 $\frac{1}{2}$	31 $\frac{1}{2}$	50
New York	New Brunswick		"	"	9	4 $\frac{1}{2}$	31 $\frac{1}{2}$	50
Philadelphia	New York		Camden and Amboy,	Daily,	7		91	3 00
New York	Philadelphia		"	"	5 $\frac{1}{2}$		91	3 00
Philadelphia	Bristol		Philadelphia and Trenton,	"	9		30	75
Bristol	Philadelphia		"	"	9	4	30	75
Philadelphia	Baltimore		Philad. Wtl. and Baltimore,	"	8	4	93	
Baltimore	Philadelphia		"	"	9	8	93	
"	Washington		Baltimore and Washington,	"	9	5, 11 $\frac{1}{2}$	41	2 50
Washington	Baltimore		"	"	6	5 $\frac{1}{2}$	41	2 50
Baltimore	Cumberland and inter. places		Baltimore and Ohio,	"	7 $\frac{1}{2}$			
"	Frederick		"	"	7 $\frac{1}{2}$	4		
Cumberland	Baltimore		"	"	8			
Hancock	"		"	"	10 $\frac{1}{2}$			
Martinsburg	"		"	"	11 $\frac{1}{2}$			
Harper's Ferry	"		"	"		12 $\frac{1}{2}$		
Frederick	"		"	"		2		
"	"		"	Sundays,	8			
Ellicott's Mills	"		"	Daily,	7 $\frac{1}{2}$, 12	4 $\frac{1}{2}$		
Richmond	Petersburg		Richmond and Petersburg,	"	10 $\frac{1}{2}$	1 $\frac{1}{2}$		
Petersburg	Richmond		"	"	5 $\frac{1}{2}$			
Albany	Schenectady		Mohawk and Hudson,	"	8	5 $\frac{1}{2}$		
Schenectady	Albany		"	"	9	3 $\frac{1}{2}$		
Albany	Saratoga		"	"	7 $\frac{1}{2}$	2		
Saratoga	Albany		"	"	7	12 $\frac{1}{2}$, 5		
Troy	Saratoga		Troy and Saratoga,	"		3 $\frac{1}{2}$		
Saratoga	Troy		"	"	7 $\frac{1}{2}$			
Auburn	Rochester		Auburn and Rochester,	"	8 $\frac{1}{2}$			
Rochester	Auburn		"	"	8	3		
"	Buffalo		Rochester and Buffalo,	"		3		
Buffalo	Rochester		"	"				
"	Falls		Buffalo and Falls,	"	9			
Falls	Buffalo		"	"		1 $\frac{1}{2}$		
Buffalo	Albany		Albany and Buffalo	"	8 $\frac{1}{2}$			